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# MOTOR WORLD

A Trade Paper Giving the World's Motor New

Vol. XXXVIII

New York, December 25, 1913

Ten cents a c Two dollars a y

# **Building For The Future!**

A good automobile (no matter what it cost) equipped with a doubtful starter does not and will not measure up to standard.

The prospective purchaser may buy. The sale may be made. The check in bank. But—

What about next year? If the owner does not get satisfactory service out of the starting-lighting system, if it fails in the pinch, dissatisfaction follows trouble and that puts the cross on re-orders.

Don't gamble with good will. Don't take a chance. Service, satisfaction, and efficiency are easily obtained in the—

# GRAY & DAVIS STARTING-LIGHTING SYSTEM

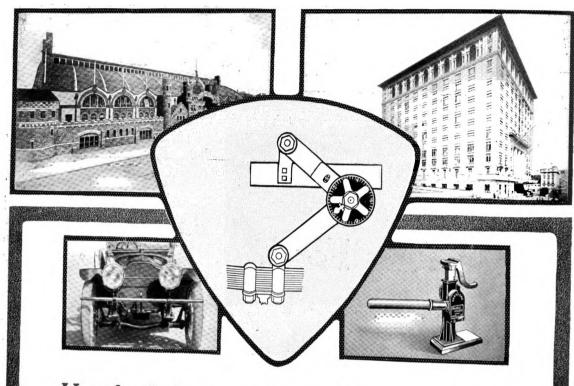
The manufacturers who adopt this system, the dealers who handle it, the purchasers who use it, secure SERVICE—service creates sales, formulates good will and insures future business.

"A Service Department That Serves."

GRAY & DAVIS, Inc.

Boston, Mass.

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# Hartford Accessories will be Exhibited and Demonstrated at Both Shows

FFICIENCY of equipment is as much to be desired in a caras efficiency of construction desired in a caras efficiency of construction. The high degree of efficiency attained in Truffault-Hartford Shock Absorbers, Hartford Bumpers, and Hartford Auto-Jacks is attested by the fact that nearly every high-grade, upto-date American car is furnished with one or more of these Hartford-built accessories.

Truffault-Hartford Shock Absorbers are included as standard equipment on the output of twenty-five of the greatest automobile fac-tories in the world. They have brought easy riding and greater economy to over 200,000 motorists. The device is yet to be conceived which can satisfactorily take the place of the Truffault-Hartford. Four models including

the New Automatic - be sure to see this latest Truffault-Hartford at the show.

Come and examine the Hartford Auto-Jack. It has three times the lifting efficiency of the ordinary jack—is better designed, better built and better finished without being over-priced. And Hartford Bumpers are designed to give thoroughly effective protection without marring the appearance of car or adding excessive weight. The method by which they are attached is a distinct improvement.

Hartford accessories are always interestingly exhibited and demonstrated. That is possibly the reason why the Hartford Suspension Company's Booth is always a centre of interest for show goers.

# HARTFORD SUSPENSION CO.

EDWARD V. HARTFORD, Pres.

Office and Works: 142 Bay Street, Jersey City, N. J. Manufacturers of Hartford Electric Lighting and Starting System

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Boston—319-325 Columbus Ave,
Chicago—1489 Michigan Ave,
Philadelphia—1437 Vine St.

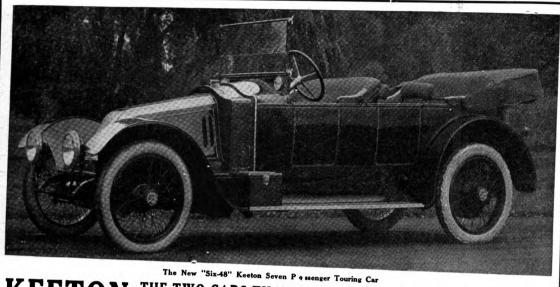
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Detroit—803 Woodward Ave,
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John Millen & Son, Ltd.
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Pa.





#### KEETON THE TWO CARS THAT WILL **CAR-NATION INCREASE YOUR SALES** KEETON SPECIFICATIONS

The volume of your sales depends largely upon the attraction value of the cars you handle. Some cars feature power, some economy, some quietness, others speed, appearance, price, etc., but in no other car will you find these qualities blended in such harmonious proportions as in the new "Six-48" Keeton.

A limited number of these "distinctive" cars will be produced for the coming season and dealers will find it greatly to their advantage to get in touch with us at once.

KEETON SPECIFICATIONS

Motor—Six cylinder, 4 in. bore, 5 in. stroke, cast en bloc. "I." head.

Ignition—Eisemann Dual High Tension Magneto, Autantic Spark Advance.

Electric Starting-Lighting—"Jesco" Starting and Lighting "Jesco" Starting and Lighting by the control of the co

Clutch—Cone shaped steel disks running in oil and housed in fly wheel.

Transmission—Selective type, 4 speeds forward and reverse, direct on third, imported annular bearings.

Wheels—Five interchangeable wire wheels, 34 in. in diameter, 4½ in. tires.

Speedometer—Warner Autometer with clock combination.

Horn—Large Klaxon.

Air Pump—Mechanically operated, two-cylinder compressor.

Wheel Base—136 inches.

PRICES—F. O. B. DETROIT

2 Passenger Roadster, completely equipped.

7 Passenger Touring Car, completely equipped.

83250

A full line of open and closed hodies.

equipped .... A full line of open and closed bodies.



Two Passenger "Car-Nation" Plowing Mud

#### CAR-NATION SPECIFICATIONS

Unit Power Plant—Motor—4 cyl. en bloc. 33b x 334, "L" head—large valves and bearings. Very quiet and powerful. Ignition—Magneto—Fixed Spark. Lubrication—Constant Level Splash—Plunger

Drive—Bevel gear through concentric Torque tube with one universal joint. Rear Axle—Semi-Floating Type, Hyatt Roller Bearings.

"The Car for the American Public"

## More Than a Cyclecar

The Car-Nation has all the features hitherto only found on large expensive cars, yet it is light, the price is within the reach of the great majority of hivers

the price is within the reach of the solutions of buyers, of buyers, of buyers.

The Car-Nation is made of standard parts, every one of which has been time tried and proven by one of the solution of the sol

think of what this means in every day service to an owner.

Read the specifications and go over them part by part with any car you can think of. The 4 cylinder block motor with 3 speed forward and reverse, as a unit power plant—wire wheels. Left hand as a unit power plant—wire wheels. Left hand drive, center control—V-shaped radiator with a siloping hood and cowl—in fact every part is a "feature" in many larger cars.

Standard Equipment—Horn—Head Lamps and Tail Lamp, with set of tools.

PRICES Extra Equipment: 10p \$25--Windshield \$10.00 DEALERS--We are now producing these cars and the territory is going fast. You can make a very advantageous connection by closing your territory for this line.

Bearings.

Brakes—Emergency, Internal Exp. on 10 in. drum on rear wheels. Service, external contracting on transmission shaft.

Wheels—Datable wire—30 x 3 in. clincher clinical discount of the contraction. H. drive, center control.

Wheel Base—104 inches.

Tread—48 inches. Luoricatun—Chistant
Pump,
Carburetor—Approved Type—very economical.
Cooling—Thermo-Syphon. V-shaped radiator,
adjustable belt-driven fan.
Clutch—Multiple steel disk type running in oil.
Transmission—Selective type 3 speeds forward
and reverse—One lever control. Manufactured by Keeton Motor Co., Detroit, U. S. A. See Our Exhibits at New York and Chicago Shows

Parto.

F. N. Th. A.

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See It At the Shows!

# SHARRER ONE HAND TOP

The only top that can be raised or lowered with ONE HAND—and it can be done in less than ten seconds, too! Raised from within or from outside the car.

#### MODERN EQUIPMENT DEMANDS THE SHARRER

The old style top is out of date. Today motorists want the latest in comfort and convenience.

The one top which will satisfy this need is the SHARRER. It is a big factor in driving home a sale. The more progressive manufacturers are adopting it for 1914.

To Automobile Manufacturers: We are prepared to supply sockets, assembled frames, complete tops, or will lease shop rights at prices you cannot turn down. Let us quote you.

To Top Manufacturers: We have an interesting proposition for you regarding manufacturing rights.

The SHARRER is fully covered by patents and we guarantee to protect you.

We are exhibiting at the New York Automobile Show, Space D-177 a, 4th floor. We'll be at Chicago, too.

THE SHARRER PATENT TOP CO., Inc.
245 West 55th St., New York City

Telephone, Col. 6590





9veria \$950

Completely Equipped
with electric starter and generator—\$1075
Prices f. o. b. Toledo

Electric head, side tail and dash lights Storage battery 35 Horsepower motor 114-inch wheelbase 33 x 4 Q. D. tires

Three-quarter floating rear axle Timken and Hyatt bearings Deep upholstery Brewster green body,

nickel and aluminum trimmings Mohair top, curtains and boot Clear-vision windshield

Cowl dash Stewart speedometer Electric horn Flush U doors with concealed hinges

THE Automobile Chamber of Commerce has awarded the Willys-Overland Company the position of honor at the New York Automobile Show which opens in the Grand Central Palace, January 3rd.

This is OFFICIAL recognition of Overland success and proof that we are doing the largest business.

Literature on request. Please address Dept. 50

The Willys-Overland Company

Manufacturers of the famous Garford and Willys-Utility Trucks. Full information on request

# 1 OTOR WORLD

Vol. XXXVIII

New York, U. S. A., Thursday, December 25, 1913

#### TA TAVI

# REO AND OWEN PART AFTER SALES PACT OF MANY YEARS

Manufacturer of Reo Car to Sell Them
Direct Hereafter—Owen Disposes
of His Business and Will Take
up Electrical Transmission.

After having been maintained since the first Reo car was produced, the agreement between the Reo Motor Car Co., of Lansing, Mich., and R. M. Owen & Co., of Lansing and New York, whereby the latter marketed the Reo output, was terminated by mutual consent on Monday last, 22nd inst., a proceeding which, being unforeshadowed, created trade-wide surprise.

The official reason given for the termination of the agreement is "the rapid changes that have recently taken place affecting the status of the automobile business, which has made desirable a closer alliance between the manufacturer and the consumer."

It is known that, quite apart from the rewards which have come to him during the life of the contract, Ray M. Owen, who with Paul Rainey comprised the firm bearing his name, profited handsomely by the transfer of his business to the Reo company, which, among other things, will take over the Owen New York establishment on 63rd street, which will be continued as a Reo branch in charge of R. E. Ingersoll.

While Owen himself made periodical visits to the Reo factory in Lansing, he spent most of his time in New York, his representative at the factory being R. C. Reuschaw, who, under the new arrangement, will remain in charge of the Reo sales department and deal directly with the Reo agents as the representative of the Reo company itself.

In addition to handling Reos at retail in New York, Owen & Co. also represented the Premier car, concerning the continuation of which, however, no arrangement has yet been effected, although it is believed one is probable. Owen hereafter will make his headquarters with the American Taximeter Co., of New York, of which he is vice-president, but most of his energy will be devoted to the exploitation of the Entz electric transmission, invented by the Cleveland man of that name and for the development of which Owen has advanced a very large sum.

The Entz device not only eliminates the shifting of gears but gears themselves, as well as the flywheel and lighting and starting systems. A car fitted with the Entz transmission, which, it is stated, has undergone 20,000 miles of service, will be demonstrated in New York next week and later will be exhibited at the forthcoming New York show.

Owen came to New York from Cleveland about 12 years ago and managed the Olds branch, to which at that time were attached Carl H. Page and the late General Cutting. When R. E. Olds left the Olds company and formed the Reo, Owen shared his fortunes.

#### Adamson's Portable Vulcanizer Sustained.

In the United States District Court of Appeals for the Eastern District of Wisconsin last week, Judge Geiger upheld the patent on the Adamson portable vulcanizer in the suit brought by the Adamson Mfg. Co., of East Palestine, O., against the C. A. Shaler Co., of Waupun, Wis. The patent which the latter was adjudged to be infringing is numbered 1,057,911, which was issued April 1st last to Cecil F. Adamson. The court granted an injunction and an accounting and, by consent of the Shaler counsel, dismissed the counterclaim which had been set up.

#### Chamber of Commerce is Nationalized.

On and after January 26th next, it will be the National Automobile Chamber of Commerce, the New York Supreme Court having granted the application of the corporation to insert the prefix "National" in its title. The court order specifies January 26th as the date on which the change will become effective.

# OVERLAND DEALER TO TAKE OVER BIG PEERLESS BRANC

Arrangements Practically Complet Whereby C. T. Silver Will Acquire Cleveland Company's "Marble Palace" in New York.

Unless a hitch develops, C. T. Silver, metropolitan distributor of Overland ca will take over the Peerless Motor Car of New York on January 1st next, a thereafter will occupy the marble palace Broadway in which this Peerless branch housed. Negotiations to that end are wadvanced but, until Saturday next, it can to be truly said that they have been cosummated.

While the discontinuance of the Peerlbranch will be in no sense a surprise, extreme likelihood of Silver's acquirement of the Peerless agency and his removal the marble palace, which almost overlook his present comparatively modest quarter is so startling as to almost endanger cruftly. Silver himself, however, admits the negotiations practically have been coluded and, in response to the questional promptly remove the "refrigerator," that the promptly remove the "refrigerator," the promptly r

#### One Simplex Becomes a Monarch.

Having reincorporated under the laws Delaware, since it removed its factory from New York City to New Brunswick, N. the Simplex Automobile Co., as a short of to winding up the New York corporation has applied for and received permissified from the Supreme Court to change to name of the New York concern to Monar Automobile Co., the change to become fective January 26th next. The capital the New York corporation, which will take the New York corporation, which will take the New York corporation and the New York corporation which will be reduced to the trominal sum of \$1,000.

#### MOTOR WORLD

#### FORD ASSETS \$35,000,000: SURPLUS OVER \$28,000,000

Detailed Statement Reveals Big "Little Car" Corporation's Financial Strength-Assets Increase \$15,000,000 in Year.

Going into greater detail than in its previous reports of the sort, the Ford Motor Co., of Detroit, as required by the laws of Massachusetts, has filed in that State its annual statement of financial condition, as of September 30th last. Keeping in mind that the company declared a \$10,000,000 cash dividend in June last, the figures disclosed by its present report serve only to accentuate the remarkable position obtained by the Ford company.

With patents carried at the modest sum of \$57,000, its total assets amount to \$35,-033,919.86, an increase of \$15,000,000, during the year. Of the assets, \$13,225,000 is represented by cash, and \$10,669,000 by real estate and machinery which latter sum represents an increase of practically 100 per cent. The merchandise inventory totals \$9,046,000.

Even these impressive figures, however, fail to tell the whole story, as the chief item of the company's liabilities is its surplus, which, despite the \$10,000,000 dividend, has doubled itself during the year and now stands at the stupendous figure, \$28,124,000. Accounts payable, \$3,049,000; capital stock, \$2,000,000, and reserve for depreciation, \$1,-061,000 are the only other liabilities which exceed six figures.

The statement in full is as follows:

#### Assets.

, Assets.	
Cash on hand and in banks Michigan municipal tax exempt bonds at cost Accounts receivable	
Accounts received to the	1,283,943.59
Accounts receivable	448,233.93
Merchandise inventory at cost	9,046,171.68
Other investments	
Prepaid expenses Buildings and buildings	7,433.32
Buildings and building fixtures	215,259.29
Factory equipment.	4,615,156,82
Office furniture and fixtures	676,589.49
Power plant	77,357.60
Power plant	526.945.24
Tools	2,305,962.09
ToolsPatterns	924 001 0
Patterns Machinery tools	824,901.04
Machinery, tools and equip-	92,710.13
ment at branches	
Patents	89.837.13
Total -	,
Total\$	35.033 010 04
- ·	-14,00,019,00
L'iabilities.	
ACCOUNTS NAME LT.	
Accrued payrolls Accrued salaries	3,049,586.86
Accrued solo-	191,940.70
Accrued expenses	24.140.70
Contract = 1	24,169.30
Contract rebates	266,119,43
reserve:	25,960.00
For employes' bonus	***
For depreciation of 6	134,999.96
For depreciation of fixed as-	3.510.55
nest	-10.03

For depreciation of fixed as-

1,061.805.25

N. 10 1

#### For depreciation of patents. 57,224.63 34.059.63 For fire insurance premiums For unearned profits (branches) ...... 60,370.23 Capital stock 2,000,000.00 Surplus 28,124,173,68 2.000,000,00

#### Total .....\$35,033,919.86 Velie Discloses Financial Conditions.

Complying with the laws of Massachusetts, in which it does business, the Velie Motor Vehicle Co., of Moline, Ill., has filed a statement of its financial condition, as of August 30th last, which discloses assets of \$1,650,908, an increase of, roughly, \$200,000. The largest item is made up of material and stock in process, \$669,626. The statement, and how it compares with that of 1912, is as follows:

1913.

1912.

Real estate, plant and	1913.	1912.
Material, stock in	\$381,248	\$359,459
Cash and debts receiv-	669,626	727,405
able	472,601	271,630
TIALUTES, TOOLS atc	72,910	271,030
Deferred charges		75,855
	54,520	<b>48,7</b> 55
Total\$		\$1,483,106
Liabilit	ies.	
Capital stock	\$800,000	\$501,000
	293,499	170 500
runged debt	230,000	170,592
A TOULING MANE	270,000	265,000
riont and lose (1.	270,000	425,000
reired)	43,366	
ourprus	14,042	121,014
Total\$1	,650,908	\$1,483,106
		,100

#### Indiana Meteor Shooting into Ohio.

Having acquired the necessary support, the Meteor Motor Car Co., now located in Shelbyville, Ind., is preparing to remove to Piqua, O., where a factory building has been secured on Washington avenue. Incidental to the removal, the Indiana company has been dissolved and a new one incorporated, under the laws of Ohio, with an authorized capital of \$50,000. Maurice Wolfe, who owned the Shelbyville enterprise, will retain 50 per cent. of the new stock and remain in active charge of its affairs.

#### Licenses for Splitdorf and Standard.

The Splitdorf Electrical Co., of Newark, N. J., and the Standard Co., of Torrington, Conn., which are closely related, have taken out licenses to manufacture spark plugs under the Canfield patent. The licenses, of course, were granted by A. R. Mosler & Co., which owns the patent.

Jones Locates Wheel Plant in California. Phineas Jones & Co., the veteran wood wheel manufacturers of Newark, N. J., have established a branch plant in Los Angeles. Cal. It will be operated under the style Phineas Jones & Co. of California.

#### **WOMAN TRIES TO MAKE COLT** REPAY U. S. RUBBER \$760,000

Claims Revere Rubber "Syndicate "Deal" Was Illegal - President Asks Court for Judgment Without Trial, but is Refused.

The insistence of the directors of the United States Rubber Co. that the syndicate deal whereby the Revere Rubber Co. and the Canadian Consolidated Rubber Co., Ltd., were acquired by the United States Rubber was legal and sanctioned by the directors was not of sufficient weight to cause Judge Cohalan of the Supreme Court for New York County this week to dismiss the suit in which Carolyn De Wolf Theobald, a stockholder, demands that Samuel P. Colt, the companys' head, repay to the company \$731,289.10. Basing the motion upon the acquiescence of the directorate, Colt moved for a dismissal but was denied.

The plaintiff sues for herself and for any others who care to come into the action; she charges that the syndicate deal was illegal and claims Samuel P. Colt, the company's president, and others appropriated money to which they had no right.

The various papers in the action bring out that when the United States Rubber Co. wished to gain control of the Revere company a syndicate was formed "inside" with Colt at its head; this group was to gather a sufficient amount of stock and resell it to the United States Rubber and was to be given in addition the net earnings of the Revere company from December, 1909, to December 31, 1911, with the exception that the syndicate was to get but half of the earnings above \$700,000. The earnings for this period were \$762,578.21, and splitting the \$62,578.21 in half, the syndicate drew down \$731,289.10, paying \$31,289.11 to the United States Rubber Co.

Later the directors sanctioned the whole proceedings and the fact that the big company has placed its stamp of approval upon the deal is made a part of the defense. The complainant charges that the deal was such that the directors had no right to declare it legal and Judge Cohalan ruled that there seems to be sufficient issues of fact to warrant a court trial, wherefore he denied the motion.

Besides the rubber company and President Colt, the defendants named are: Walter S. Ballou, Elias S. Benedict, Anthony N. Brady (now dead), Harry E. Converse, Jas. B. Ford, Frank S. Hastings, Francis L. Hine, Henry L. Hotchkiss, Arthur L. Kelley, Homer E. Sawyer, William H. Truesdale. John D. Vermeule and Frederick M.

# EUROPEAN CAR COMPLICATED COMPARED TO AMERICAN CAR

Packard Man, Returned from Abroad, Fails to Discern Superiority—Also Sees and Discusses High Efficiency Motors.

"Of course, you didn't see anything better than a Packard on 'the other side,'" laughingly vouchsafed a Motor World man to M. J. Budlong, president of the Packard Motor Car Co., of New York, who just has returned from several weeks abroad.

"Honestly, we didn't." responded Budlong, "and we looked for it, too," the "we" in the case being S. D. Waldon, vice-president of the parent Packard company, with whom Budlong made the journey.

"We visited a number of factories both in England and in France and we spent considerable time on the road and, without vainglory, I think we can safely say that America no longer has much to learn from foreign manufacturers. There is nothing their cars can do that ours cannot do as well, and as long. Their best cars command remarkably high prices, but examination fails to show wherein their value, as compared with American prices, lies, unless it be in the complications; for certainly some of the best known cars are wonderfully complicated and use many more pieces to achieve a given end than many Americans would care to use. In fact, several English drivers told us they could not, or had no desire to, drive one of the most expensive cars over there; because of its complications they doubted their ability to take care of it."

"How about the low-priced car,"

"The Ford has a good hold in England," responded Budlong. "The Ford agency sign is to be seen in nearly every little town that is passed through. Of the English low-priced cars, the Rover seems by far the most numerous, but over here it would not be accepted as a low-priced car but as a moderate priced one. In France, there are quite a number of so-called 'baby' cars to be seen on the road.

"Foreigners are ahead of us in one respect," continued Budlong, in reply to another question. "It is in the development of the small, high efficiency, high compression motor, but few, if any, of them would be practical for American purposes. Their pistons, connecting rods and other reciprocating parts are wonderfully light and with high compression they are all right for Europe, where all roads are practically boulevards and where drivers have been educated to change gears when a grade is encountered. Over here, where rough hills

and heavy sands are so plentiful, and where drivers almost expect to climb the side of a house on high gear, such compression would develop the gas knock which is so objectionable and creates so much mischief and misunderstanding. We know, because the Packard people have tried out several high compression engines.

"Yes, it is possible," continued Budlong, in response to the suggestion, "that Americans have relied too much on large strokes and bores and that a compromise in weight of reciprocating parts and valve sizes—and, believe me, they use some large ones on the other side—may result in the development of so-called high efficiency motors, but we can never use such high compression—at any rate, not until our roads equal the foreign roads, and our drivers have been educated to change gears."

#### R. C. H. Property is Finally Sold.

After a fight which lasted several hours, the meeting of the creditors, held Saturday last, in Detroit, in the office of the referee in bankruptcy, finally accepted the Todd, Frank, Freideberg Co.'s offer of \$295,000 for the assets of the R. C. H. Corporation. Harris Bros. & Co., of Chicago, were ready to increase their unsuccessful bid, and because of the fact, three of the creditors protested vigorously against the acceptance of the Todd-Frank-Freideberg offer, but their protests availed nothing.

The Todd, Frank. Freideberg Co. represents a combination of the Lincoln Realty and the O'Hara and Baird interests, which previously submitted separate offers and who, at the suggestion of the trustee, got together and formed one company and joined in a single bid. This offer guaranteed \$105,000 for the real estate and \$190,000 for the personal property, but it is believed that the new company will be able to close deals which will net at least \$400,000.

The Todd, Frank, Freideberg Co. will continue the production of R. C. H. cars until the parts on hand are utilized and will then either reorganize or sell the company as a going concern.

The R. C. H. property was appraised at \$650,000, of which \$400,000 was represented by real estate.

#### S. A. E. Inclines Toward Cape May.

Instead of "going to sea," even on an inland lake, the Society of Automobile Engineers almost certainly will hold its next midsummer meeting at Cape May, N. J., the shore of which at least is washed by the great and salty Atlantic. June 22nd to 27th are the probable dates of the meeting. The S. A. E. council is now discussing the subject, but as no opposition to Cape May has developed its selection is practically assured.

#### POPE STOCKHOLDERS IN BAY STATE "TONE DOWN" DEMAND

Now Ask for One Coreceiver Instead of for Two—Testimony Discloses Company's Financial Condition —Appraisers File Report.

Taking their cue from the remark let fall by Judge Case, of the Connecticut Superior Court, at the time he confirmed Colonel George Pope as sole receiver for the Pope Mfg. Co. in that State and refused to name Charles A. Morss and Charles A. Persons as coreceivers, the Massachusetts stockholders and creditors on Friday last, 19th inst., renewed their application in modified form. Instead of asking for two coreceivers, they sought only to have Morss named. Judge Case, when he named Colonel Pope as sole receiver, having then stated that had the Massachusetts interests asked for but one he probably would have been inclined to accede to their request. He now has the modified application under advisement.

During the proceedings in the Connecticut court on Friday, Colonel George Pope took the stand. Stating that he had been treasurer of the Pope company since its reorganization in 1908, he enumerated the profits of each fiscal year as follows:

1909, \$420,117.98; 1910, \$630.199.40; 1911, \$75,532.08; 1912, \$137,895.33. For the fiscal year of 1913, although three dividends had been paid, there was a loss, though Colonel Pope said he did not have the figures.

In the course of his testimony, it was brought out that the total net dividend on the preferred stock in connection with the automobile business had been \$551,508. On the bicycle business at Westfield, Mass., the total dividends had been \$442,133. Colonel Pope explained the amount paid in dividends had exceeded the net earnings. As receiver in Connecticut he has about \$110,000 on hand at the present time.

According to Colonel Pope there are about 350 employes at the Hartford factory, which is preparing to build 400 automobiles.

Thomas S. Baxter, of the Boston banking firm of Bond & Goodwin, also took the stand to support the plea for a coreceiver, the Massachusetts stockholders' attorney having expressed the belief that the Pope business should not be managed by Colonel Pope alone, and that he should not be taking counsel from men who were associated with him when the company got into its present position.

Bond & Goodwin, it appears, hold Pope notes to the value of \$170.000, and it also assisted in floating a million dollar loan, of which the \$170.000 indebtedness is a part.

#### ENGINEERS CHOOSE A. C. A. FOR ANNUAL WINTER MEETING

Lack of Space in Grand Central Palace Necessitates the Change-Original Schedule Unaltered-Several Papers Added.

Lack of sufficient space having precluded the possibility of holding the forthcoming annual winter meeting of the Society of Automobile Engineers in Grand Central Palace, as at first was proposed and scheduled, it has been decided, instead, to hold the gatherings in the Automobile Club of America building, located at 247 West 54th street.

The original schedule, insofar as dates are concerned, however, has not been changed, the meeting opening formally with a social gathering on Sunday afternoon, January 4th, at the Manhattan Automobile Club in West 62d street, the other sessions following thereafter on Monday, when a session of the Standards Committee will be held in the headquarters of the Society in the United States Rubber Building at 1790 Broadway, and on Tuesday and Thursday at the A. C. A., no meeting being scheduled for Wednesday. The annual banquet and entertainment, which will wind up the meeting, will be held at the Hotel Plaza on Thursday evening and will be preceded by an informal reception.

Since the publication of the tentative program, three papers have been added, as follows: "Necessity of More Special Data for Electric Car Designers," by W. J. B. Thomas, chief engineer of the Century Electric Car Co.; "Workshop Organization," by Chas. G. Renold, director, Hans Renold, Ltd.; "Notes ou Scientific Shop Management," by Henry W. Allingham, production engineer, also of Hans Renold,

At the same time, Secretary Clarkson, of the Society, has inaugurated an innovation in program matters by indicating the exact time at which each of the papers and reporta will be read by their respective authors, the action marking a laudable endeavor to conserve the time of those who desire to be present at the reading of a particular paper but who heretofore have found it necessary to sit through a whole session without any definite knowledge as to when any one paper would be read.

### Ajax-Grieb Sued by Rubber Bankrupt.

The many rubber contracts of the New York Commercial Co., which was adjudicated a bankrupt April 12, 1913, resulted in another action this week against a member of the automobile trade; several suits

against tire makers followed the failure and this last one, brought in the Supreme Court for New York county, is against the Ajax-Grieb Rubber Co., of New York City.

John Z. Lowe, Jr., William S. De Long and Joseph W. Harriman, as trustees in bankruptcy, allege that the Ajax-Grieb concern contracted January 21, 1913, for 10 long tons of Usual Good Quality Upriver Coarse Para rubber at 78 cents a pound but accepted not more than 10,643 pounds. The balance was tendered, it is stated, but the Ajax-Grieb company declined to accept the shipment and volunteered to settle the matter by paying the difference between the contract price and the then existing market price, which was 591/2 cents on the date of tender, May 10.

This sum was \$1,968.95, and it is claimed that no part of it was ever paid; wherefore the bankruptcy officials demand this amount.

#### Batavia Drops Suit Against Seamless.

While the exact terms of settlement are not divulged, the action instituted nearly a year ago in the United States District Court for the Southern District of New York by the Batavia Rubber Co., of Batavia, N. Y., against the Seamless Rubber Co., of New Haven, Conn., for alleged imitation of the Batavia tread was discontinued this week. The Batavia company charged that the Seamless company imitated the Batavia's "Security" tread, the design of which consists of cuts at an angle to the center circumference of the tread.

The Batavia company charged that this constituted unfair competition and asked for an injunction, accounting and damages. The litigation furnished a novelty at the time because it concerned a design of a tread, a phase of the tire business which theretofore had been free from legal conflict. At that time the Batavia company stated that several other companies were guilty of similar offenses.

#### Maxwell Sells Rhode Island Plant.

The disused Maxwell-Briscoe Auburn (R. I.) plant, one of the possessions of the Maxwell Motor Co., of Detroit, has been sold to the Universal Winding Co., of Providence, R. I. The property comprises about 12 acres, upon which there are standing 21 buildings of various sizes and descriptions.

#### Supply House Files Bankruptcy Figures.

The United Auto Supply Co., of 88 Chambers street, New York City, which went into bankruptcy several weeks ago, has filed its schedules in the Federal court in New York City; these show liabilities of \$15,291 and assets of \$3.737, consisting of: Stock, \$3,000; fixtures, \$250; accounts, \$422; cash,

When this \$1,000,000 loan was being negotiated, Baxter said, financial and physical reports of the Pope Mfg. Co. had been given by the company and by experts who had investigated, and Baxter said that these reports were greater than the appraisal filed in the court the day before. Baxter took with him to the witness stand a report that had been made by Price, Waterhouse & Co., in July, 1912, as to the property and equipment of the company, and he said that reports which he had showed that, for the last two years, there had been a loss in the automobile business of the company. He said that reports showed that commissions had been paid to officers of the company and that seventeen automobiles had been furnished to officers of the company, and repairs to these automobiles had been made at the expense of the company. He said also that the appraisal filed in court was about \$1,000,000 less than the value made in the report furnished by the company and about the same amount less than the value in the report made by Price, Waterhouse & Co.

The report of the Pope appraisers, Fred C. Billings and John R. Hills, was also filed last week. Including accounts collectible, \$181,461.30, the schedule places the assets at \$2,034,899.96, the several other items being made up as follows:

Land on Capitol avenue... Buildings on this property.... West Works lot \$84,750:00 634,375.00 47.200.00 Buildings on this property..... 62,800.00 Equipment at main plant..... 107,000.00 Machinery for manufacturing .. Standard small tools ..... 369,877,71 15,000.00 Special tools ..... 46,822.00 Patterns for auto. parts...... Main office furniture, etc..... Equipment at West Works.... 2,600.00 3,500.00 11,795.56 40,000 00 43 cars in process 81,300.00 Raw material, finished parts, etc. ...... Collectible accounts ..... 331,542.81 181,461.30

Total .....\$2,034,899.96

According to memoranda which accompanied the schedules, the appraisers reduced the value of raw material, finished parts and work in process from \$663,085.63 to \$331,-542.81. They also pared the accounts collectible, which represent 797 accounts, from \$224,519.18 to \$181,461.30. The building and real estate values were listed according to the appraisers' judgment and not at cost

The Massachusetts stockholders and creditors asked for a more detailed inventory and Judge Case remarked that he believed they were entitled to it. Colonel Pope's attorney, in turn, asked that the receiver's salary be placed at \$9,000 per year, which is the same sum Colonel Pope had been paid in the capacity of treasurer of the comThe Week's Incorporations

Adrian, Mich.—National Automobile Accessories Co., under Michigan laws; authorized capital, \$6,000.

Detroit, Mich. — Perrett - Barber Motor Sales Co., under Michigan laws; authorized capital, \$10,000; to deal in motor cars.

Wabash, Ill.—Service Motor Car Co., under Indiana laws; authorized capital, \$250,000; to manufacture and deal in motor cars.

Detroit, Mich.—Detroit Axle Co., under Michigan laws; authorized capital, \$50,000. Corporators—William Dailey and George W. Weipert.

Piqua, O.—Meteor Motor Car Co., under Ohio laws; authorized capital, \$50,000. Corporators—W. K. Boal, Stanhope Boal and C. W. Magee.

Ford, Mich.—Rex Motor Co., under Michigan laws; authorized capital, \$75,000. Corporators—Charles H. Ripple, William J. Frasier and Alfred Robinson.

Detroit, Mich.—Advance Gear Co., under Michigan laws; authorized capital, \$50,000. Corporators—J. P. Lavigne, Charles O. Barnes and H. T. Bradley.

Toronto, Ont.—Marburg Bros., under Canadian laws; authorized capital, \$40,000; to manufacture machinery, etc. Corporators—Otto Veit, M. C. Lamburn and others.

Arcade, N. Y.—Arcade Motor Car Co., under New York laws; authorized capital, \$15,000. Corporators—Kirke R. Wilson, Arcade; F. R. Wilson and Annie M. Wilson, both of Eagle, N. Y.

New York, N. Y.—Briscoe Motor Co., under Delaware laws; authorized capital, \$500,000. Corporators—L. E. Latter, New York City; W. J. Maloney and Herbert Latter, Wilmington, Del.

Cleveland, O.—Grant Distributing Co., under Ohio laws; authorized capital, \$25,000; to deal in motor cars. Corporators—E. C. Anderson, G. W. Anderson, F. E. Stuyvesant, and O. F. Coville.

Cleveland, O.—Dunham Motor Co., under Ohio laws; authorized capital, \$10,000; to deal in motor cars. Corporators—L. A. Dunham, C. W. Rush, G. K. Wadsworth, H. A. Mullen and T. S. Dunlap.

Toronto, Ont.—Canadian Bartlett Automobile Co., under Canadian laws; authorizer capital, \$1,000,000; to build automobiles, carriages, etc. Corporators—Francis Watts, John A. Donovan and others.

Jacksonville, Fla.—Panama Park Transportation Co., under Florida laws; authorized capital, \$5,000; to conduct a general motor vehicle business, carry passengers by motor vehicles and operate garages.

Detroit, Mich.—Detroit Ball Bearing Co., under Michigan laws; authorized capital, \$2,000; to manufacture ball bearings and other metal specialties. Corporators—Jos. Pauer, James Cerney and Robert Weigel.

Indianapolis, Ind.—Crabb Auto Sales & Accessories Co., under Indiana laws; authorized capital, \$10,000; to deal in motor cars and accessories. Corporators—George L. Crabb, J. D. Thornton and H. M. Wolfe.

New York, N. Y.—Town Taxi Co., under New York laws; authorized capital, \$5,000; to manufacture taxicabs, etc. Corporators —John N. Scelsa, Joseph F. Dempsey and Eugene A. Donohue, all of 59 Wall street.

Youngstown, O.—Dietrich Motor Car Co., under Ohio laws; authorized capital, \$15,000; to deal in motor vehicles. Corporators—Dale Dietrich, Albert Dietrich, Frank Dietrich, J. Fred Dietrich and C. S. Dietrich.

Johnsonville, N. Y.—Abbott-Akin Co., under New York laws; authorized capital, \$10,000; to engage in the automobile business. Corporators—Ernest H. Abbott, John Slade and Howard V. Akin, all of Johnsonville.

Buffalo, N. Y.—Barnard-Michael Tire Co., under New York laws; authorized capital, \$10,000; to manufacture automobile tires. Corporators—Robert S. Barnard, Isidore Michael and Sidney M. Michael, all of Buffalo.

Cincinnati, O.—Ten Broeck Tire Sales Co., under Ohio laws; authorized capital, \$5,000; to sell Ten Broeck automobile tires. Corporators—R. T. Durett, M. L. Lewman, John E. Bruce, H. C. Upson and J. H. Brownell.

Columbus, O.—Direct Drive Axle Co., under Ohio laws; authorized capital, \$10,000; to manufacture and deal in transmissions. Corporators—W. E. Campbell, C. O. Haines, C. T. Phillips, I. M. Pluckharp, and H. B. Gilchrist.

South Charleston, O.—Baker Auto Transit Co., under Ohio laws; authorized capital, \$10.000; to operate a motor 'bus line. Corporators—George W. Baker, William

W. Kiefer, Floyd Baker, W. E. Roderick and C. J. Baughn.

Troy, N. Y.—Aird Motor Co., under New York laws; authorized capital, \$10,000; to deal in motor cars and accessories. Corporators—John W. Aird, 464 Third avenue; Alanson A. Aird and Alanson W. Aird, both of Summit avenue.

Utica, N. Y.—Utica Saxon" Motor Corporation, under New York laws; authorized capital, \$10,000. Corporators—William D. Lyon, 17 Howard avenue; J. William Seaton, 29 Plant street; William P. S. Doolittle, 300 Genesee street.

New York, N. Y.—Peerless Motor Specialty Co., under New York laws; authorized capital, \$1,500. Corporators—Harry E. Spencer, 60 East 23rd street; Gustave Weinberg, 523 West 143rd street; Ernest M. Culp, 954 Gravesend avenue, Brooklyn.

Wheeling, W. Va.—Reo Motor Sales Agency, under West Virginia laws; authorized capital, \$10,000; to conduct an automobile agency. Corporators—T. Herbert Bachman, W. A. Guillette, Charles F. Bachman and George W. Yaego, all of Wheeling.

Galesburg, Ill.—Chicago-St. Louis Automobile Boulevard Co., under Illinois laws; authorized capital, \$6,000; to engage in a general manufacturing and construction business. Corporators—A. B. Packenpaugh, N. T. Allen, Fred Peterson and R. D. Moore.

Buffalo, N. Y.—Leitze Incorporated, under New York laws; authorized capital, \$10,000; to manufacture motor vehicles, supplies, etc. Corporators—Elizabeth Leitze and Edward P. Leitze, both of 293 East Eagle street; Call A. Cairns, 94 Bleecker avenue.

New York, N. Y.—American Motor & Transmission Co., under New York laws; authorized capital, \$50,000. Corporators—Charles H. Bassford, 195 Dickerson street, Newark, N. J.; E. V. Nixon, 51 New street, East Orange, N. J.; Eustace Reynolds, 316 West 79th street.

New York, N. Y.—Covent Garden Garage, under New York laws; authorized capital, \$40,000; to operate a garage. Corporators—Walter E. Thompson, 474 West 130th street; Alfred P. Coburn, 11 West 81st street, New York City; Charles A. Forshew, 2 Rector street, New York City.

#### AUTOMOBILE EXPORTS GAIN 13% IN MONTH OF OCTOBER

Antipodean Island Continent Heavy
Purchaser of American Cars—Engines Gain and Lose—Tire
Shipments Are Increased.

Indications of the constantly growing market for American cars in the island continent on the other side of the world are found in the export statistics compiled by the Federal government for the month of October, when they are compared with the shipments during the same month of a year ago; while Canada, formerly the largest purchaser of American cars, decreased its purchases by 107 cars and \$68,117 and the United Kingdom gained but \$30,715, British Oceania and Asia and Other Oceania are the leading buyers of the American car.

British Oceania increased its purchases by 112 cars and \$69,498 and Asia and the remainder of the Oceanic division bought 45 more cars, with an increased valuation of \$54,612; aside from Canada and the United Kingdom, these divisions, with Other Countries, are highest in volume of purchases and gains made during October.

The total export of cars in October increased by 10 per cent. in number and 13 per cent. in value. In October, 1912, 1,612 cars valued at \$1,583,812 were shipped to foreign countries and in the same month of this year the exports were 1.776 cars valued at \$1,788,222, an increase of 164 cars and \$204,410. During the same period parts advanced by \$397,770, an increase of 121 per cent.

Of the total exportation, commercial vehicles registered in the loss column, so far as

number is concerned, being less by 3; in valuation, however, trucks increased, being greater by \$10,628. The average value also moved upward; in October, 1912, the trucks exported averaged \$1,449 in value, while last October this figure was \$1,639, an increase of \$190.

Pleasure car shipments were greater by 161 cars and \$193,782 in October last; the average value increased also, by \$20. In October, 1912, foreign countries chose cars whose average value was \$957 but in that month of the present year the average value was \$977.

But three losses were recorded: Germany, 13 cars, \$17,509; Canada, 107 cars, \$68,117; South America, 9 cars, \$21,380. The gains in order financially were: Other Countries, \$74,610; British Oceania, \$69,498; Asia and Other Oceania, \$54,612; Other Europe, \$37,318; United Kingdom, \$30,715; France, \$10,939; Mexico, \$10,635; Italy, \$9,387; West Indies and Bermuda, \$3,692. The largest gains in number of cars were: British Oceania, 112; Other Countries, 89; Asia and Other Oceania, 45.

Engines during October last recorded a loss in number but a gain in value; there were 292 fewer engines exported, but the value of the exports gained by \$89,377. In connection with this apparent discrepancy it is interesting to note that whereas the value per engine a year ago was \$137, it was \$349 in October, 1913.

Tire exports showed a gain, although it was not comparatively large; the value of these products advanced by \$11,412, which is but a small per cent. of the \$237,116 valuation placed upon tires in October last.

The total of all products during October last was \$2,952,795, an advance of \$504,-969, or 20 per cent. During ten months ending with October the increase was \$5,711,-404, or 21 per cent. The details:

#### FOREIGN CAR MAKERS GET LESS OF AMERICA'S GOLD

Imports of Automobiles in October Show Loss of 56 Per Cent.—Parts Increase—France Heaviest Loser, with \$66,793.

Had not Germany charged \$2,238 more for the one car it sent to the United States in October last than it did for the single car sold here in October of last year, the imports of cars from all foreign countries by the United States would have recorded a loss for last October. As it was, Germany showed an increase in its sales in America; its one car shipment a year ago brought \$762 and the car it shipped last October cost someone \$3,000, making the only gain.

The total shipments decreased by 49 cars, or 62 per cent., in number and \$95,764, or 56 per cent., in value. Parts gained advancing by \$32,067, or 173 per cent. This however, was not enough to put the imports in the gain column, the total valuation of cars and parts showing a decrease amounting to \$63,697.

During the ten months ending with October the loss was 277 cars, or 50 per cent. and \$590,139, or 37 per cent. The heaviest losers were: France, 36 cars, \$66,793; Other Countries. 9 cars, \$21,713. The figures in detail follow:

	()ctober				
	1	1912		1913	
France	No.	Values.	No.	Values.	
France Germany	51	\$105,754	15	\$38,961	
Italy	1	762	ĩ	3,000	
United Kingdom	7	13,324	6	11,455	
Other Countries	. 8	24,318	5 2	16,691	
		26,252	2	4,539	
Total cars	-		_		
Parts (except tires)	78	\$170,410	29	\$74,646	
		18,528		50,595	
Total cars and parts	78	\$189 020		<b>*125.241</b>	

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							lotal cars	and parts 7	8 \$188 238	29 \$1	25,241
			ctober-			-			- +100,500,	42 41	23,271
				1017	-						
France	Quanti	ties. Values.		1913	,	1911	n Months	Ending Oc			
France	42	\$24,820	Quanti	ties. Values.	Quantities	1911		1912	roner		
Germany	45	Ψ=7,02U	59	\$35,759	Quantities	s. Values.	Quantities	7.	_	1913	
Italy	13	45,432	32	27,923	36ú	\$413,030	585		Quantities	. Valı	ies.
		9.785	18	19,172	95	112,121		\$439,313	714		6,090
		219,578	283	250,202	167	192,339	392	316,201	800		5,466
Canada	62	54,103	82	250,293	2,776	2,407,373	254	224,436	277		1,180
Mexico	405	491,133	298	91,421	685	635,378	4,207	3,163,696	4.183		
Mexico West Indies and Bermuda South America	17	30,719	24	423,016	4,300	4 770 011	1,340	1.098,761		3,18	
South America	35	32,418	35	41,354	210	4,770,911	6,393	7.704.772	1,565		5,24 <sup>G</sup>
British Oceania Asia and other Oceania	191	202,610		36,110	236	351,007	198	320 502	5,558	7,47	
Asia and other Ossas	264	230,665	182	181,230	766	270,994	273	320,592	199	36	2,733
Asia and other Oceania.	186	167,072	356	310,163	1,729	967,358	1,586	283,116	405	39	7,538
Other Countries	87		231	221,694		1,602,383	2,849	1.817,988	2,271	2,554	
		75,477	176	150,087	645	647,067	1 000	2,586,185	2,774	2,58	
Total cars Commercialt	1 612	£1 502 04 c		250,067	221	238,161		1.310,323	2,001	1,969	
Commercial† Passenger†	82	\$1,583,812	1,776	\$1,788,222			620	570.728	1,892		
	1 520	118,878	79	120 504	12,196	\$12,608,127	22.		1,092	1,644	1,505
Parts*	1,500	1,464,934	1,697	129,506	12,196	12,608,127	20,018	\$19.836,111	22.700		. 000
Total	• • • • •	328,700		1,658,716		12,000,12/	443/	1468,578		\$23,090	
Total cars and parts*	1 (10		•••••	728,470		2724	<b>‡5,901</b>	±5.651.000	857	1,480	
Engines	1.012	\$1,912,512	1,776	40.00		2,736,550		‡5,651,998	21,872	21,609	),434
Tires	862	109,610	570	\$2,516,692	12,196			3,936,110	• • • • • •	5,177	
		225,704	-	198,987	‡928	\$15,344,677	20,018	200			
Total value all products			• • • • •	237,116	T/40	¥108.325	7,695	\$23,772,221	22,729	\$28,267	342
products		\$2,447,826			•••••	2,080,517			8.379	1,438	
* Does not include and		7-1177,020		\$2,952 705			• • • • • •	2,759,339	0.079		
mende engines and	tires.	t Not	_		•••••	\$17.533 510			•••••	3,481	,131
		separa	tely stai	ed prior		, , , , , , , , , , , , , , , , , , , ,	8	27,475 373			7777
				briot fo	luly 1, 191,	2. + Ca	_	. , 5,07 5	•••••	<b>\$33,18</b> 6	,///
* Does not include engines and					-	- + Covers	only last	half of war-			
								or year	•		



The Owl Electric Garage Co. has been formed in Minneapolis and has taken over the Owl Garage, which was established a year ago and operated by Fred H. Day; he handled the Woods electric, which agency the new company will retain. The officers of the new company are: President, J. N. Johnson; vice-president, William A. Simonson; treasurer, A. N. Wintheiser; secretary and manager, William Wintheiser, Jr.

Paul H. Beeshe, formerly connected with the Hamilton Garage, and E. B. Jay, of the Jay Sales Co., have taken over the latter concern, in Detroit, and will operate it under the style Auto Specialty Co. They have located at 307-9 Jefferson avenue east and will stock supplies and accessories, paying particular attention to specialties.

P. S. and E. A. Mahon, former real estate men, have entered the trade in Cleveland as Jackson distributers in Northern Ohio; they will operate in the quarters formerly maintained by the Jackson Auto Sales Co., at 2027 Euclid avenue. S. F. Slansky, wholesale distributer, will continue his office at that address also.

The Dominant Motor Co., of 260-66 Washington avenue, Albany, N. Y., has been taken over by L. R. Mack, formerly of Boston; Mack, who will handle Packards in his new location, is not new to the line, having been connected with the Packard business in New England for several years.

Leonard Anderson, formerly of Zeandale, and William Strasen, formerly of Alma, have purchased the Golden Belt Garage in Manhattan, Kan. Strasen had been employed in the garage for five months; Geo. Hiner the former proprietor, retains his agencies in Cole and Maxwell cars.

Charles M. Dodd has taken over the Textuto Co., of Houston, Tex., the controlling nterest in which was held by the Van Allen Fire & Rubber Co. He will operate it as a garage and automobile exchange, the Van Allen company devoting itself to supplies and accessories.

The Moyer Automobile Co., of Des Moines, Ia., has changed its name to Hudon-Jones Automobile Co. The management and control of the company remain nchanged. The name Moyer was dropped ollowing the death of the founder of the ompany.

The Jeffery Auto Sales Co., which recently took over the Jeffery branch in San Francisco, has opened new retail salesrooms at Van Ness avenue, near Geary street; the wholesale headquarters and service station will be continued as heretofore.

Phil Brain and L. M. Clancy, both formerly engaged in the banking business, have formed the Imp Cyclecar Co. in Spokane, Wash. They will handle Imps in Eastern Washington and Northern Idaho.

The Linz-Sanborn Co., of San Francisco, which announced some time ago that it had withdrawn from the trade, has reentered it; this time it is as representative of the National and Marathon lines.

Elmer Van Dellen and Joseph Sikkema, who operated in Clinton, Ia., as the Auto Supply Co., have dissolved partnership; Van Dellen purchased Sikkema's interest and will continue the business.

Willsey & Graham, of Elsinore, Cal., have taken over the Keith Garage; it is located at Main street and Heald avenue. The deal carries with it the agencies for Fords and Hupmobiles.

Nicholas Depeder, of El Paso, Tex., has purchased the interest of C. B. Aber in the Aber-Clements Auto Supply Co. He will change the name to Borderland Auto Supply Co.

The Western Motor Co. has been formed in Kansas City, Mo., to distribute Empire cars in Missouri, Kansas and Oklahoma; the salesrooms are located at 1702 Grand avenue.

Frederick W. Drosten, a jeweler, has purchased a building in St. Louis, at 12th and Locust streets, and will remodel it for use as a garage; the work will cost \$40,000.

Moody Bros. have opened a garage, repair-shop and accessory store in Peoria, Ill. They have located in a three-story structure at 1805-7 Main street.

E. B. Leverenz, of Milwaukee, has disposed of his garage and agency to Joseph J. Thor; it is located at 930 3rd street. He handled Pullman cars.

Woolverton & Harder, of Atwood, Ill., have sold their garage business to Emory O. Smith; the latter traded 35 acres of farm land for the business.

W. C. Riley, of Riley & Russell, of Charles City, Ia., has disposed of his inter-

est in the business to Russell; the latter will continue alone.

Townsley & Rohr have opened a garage in Palmyra, Mo. They have located in the building formerly occupied by A. P. Bowles as a livery stable.

J. H. Muren has taken over the Commerce truck agency in Detroit; he has opened salesrooms at Woodward avenue and Bagg street.

McCreary & Son, painters in Galesburg, Ill., have entered the automobile repairing trade; they have opened a shop at Main and Sumner streets.

F. P. Jones and L. M. Kratzer have entered the trade in Wheeling, W. Va. They have the Buick agency for Ohio and Marshall counties.

The Hancock County Auto Co., of Britt, Ia., has sold out to George F. Castle and his son, Arthur Castle; they will conduct the business.

John Cogan is about to enter the trade in New York City at 216 West 65th street; he will build bodies and conduct a used car and tire business.

Larson & Struble, implement dealers in New Hampton, Ia., have entered the automobile trade; they have secured the Franklin agency.

Paul Vincent and H. D. Redfield, of Madison, Conn., have formed the Shore Line Garage & Electric Co. They will operate a garage.

F. J. Heminger, of Belle Plaine, Ia., has sold his garage business to Virgil Boody; Heminger entered the trade two years ago.

Burnell & Clark, of Marathon, Ia., have sold their interests in the Marathon Motor Co. to Carl Peterson and Arthur Wessman.

Randall S. Williamson, of San Francisco, has purchased the garage of Miles Standish, in Richmond, Cal. He will operate it.

William Stromberg, of Milaca, Minn., heads a company which plans to erect a garage in that town; it will cost \$10,000.

F. Roick & Co., of 183 Broadway, Newburgh, N. Y., is about to open a garage; the company is a livery operator.

The East End Garage, of Grand Rapids, has been sold by Smith & Burns to Mead & Darling; the latter will operate it.

C. S. Brenholts, of Ambridge, Pa., is

about to open a garage and repair-shop; it . PROMINENT MEN IN TRADE is located on Charles street.

Angelo Burbato, of Newark, N. J., has secured permission to build a garage on High street; it will cost \$4,000.

C. E. Warren, of Wenatchee, Wash., has opened a new garage; it is located on South Wenatchee avenue.

Frank Devalon, of Porterville, Cal., has purchased the City Garage of Oliver Stillman, the former owner.

Guy S. Davison has opened salesrooms in Holderness, N. H. He has the Ford and Hudson agencies.

F. M. Thompson, of Salisbury, N. C., is erecting a new garage; it is located on East Liberty street.

Elmer Stanard, of Oxford, Mich., has admitted E. L. Green to partnership; he is a Ford dealer.

Joseph Cathcart, Jr., has opened a garage in New Brunswick N. J. It is located on Reid street.

M. J. Peery, of Johnson City, Tex., has purchased the Johnson & Felps Garage in that town.

Joseph Cathcart has opened a garage in New Brunswick, N. J. It is located on Reid street.

The Modern Auto Co. has opened up in Oscala, Ark It has located in the Pullen block.

The Augusta (Me.) Garage & Livery Co. has changed its name to S. T. Stilkey &

Charles Seufert, of Port Clinton, O., has sold his garage to his father, William Seu-

C. M. Akes, of Leon, Ia, has sold a half interest in his garage to Matthew Pullin.

H. E. Hendrickson has purchased Theodore Marvick's garage, in Villisca, Ia.

A. A. Linfor has leased a building in Clariion, Ia., and will open a garage.

John Hurrle, of St. Cloud, Minn., plans to build a garage; it will cost \$40,000.

#### Recent Losses by Fire.

Oakland, Cal.—E. A. Berg; garage damaged. Loss, \$1,000.

East Orange, N. J.—Rickey Machine Co.; garage damaged. Loss, slight.

Philadelphia, Pa.-Galvin Pardee; garage damaged. Loss, several hundred dollars.

Kansas, City, Mo.—S. J. Shinnick, East 15th street; garage damaged. Loss, \$11,000.

Detroit, Mich.-Hammond-Standish Co., 21st street; garage destroyed. Loss, \$25,-

Atlantic City, N. J.-H. M. Cockran, 12 South Maryland avenue; garage and machine-shop damaged. Loss, \$1,200.

# WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places-Few Leave the Industry.

L. B. Sanders, former sales manager of the Abbott Motor Co., of Detroit, has been appointed sales manager of the Wagenhals Motor Car Co., of the same city.

Marc Bunnell has been appointed Western representative of the Paige-Detroit Motor Car Co., of Detroit. Previously he was identified with the American Motors Co. on the Pacific Coast.

Walter H. Ilg, one-time sales and advertising manager of the defunct Schacht Motor Car Co., of Cincinnati, has connected with the Wichita Falls (Tex.) Motor Co., one of the very few companies in the South which is actually producing trucks. Ilg will have charge of its sales and advertising.

J. C. Austin, assistant chief engineer of the Studebaker Corporation, has resigned that position and established an office of his own in the Ford Building, Detroit. It is his purpose to conduct a manufacturers' service bureau, with a view of being the connecting link between outside buyers of parts and the Detroit makers thereof.

Clarence H. Booth, who several months ago succeeded J. N. Gunn as general manager of the automobile division of the Studebaker Corporation, of Detroit, has resigned that office, his resignation taking effect January 1st. Booth, who was under contract for a term of years, was released by his own request, it is stated, in order to carry out plans of his own.

### Two New York Jobbers Consolidate.

Negotiations for the consolidation of the New York Sporting Goods Co. and F. A. Baker & Co., two well-known New York jobbing houses, which have been quietly in progress for some time, have been consummated and, at the January meeting of the Sporting Goods company Baker will enter its affairs as vice-president. He will succeed Palen Nelson, a Wall street man, who has been active in the business.

P. R. Robinson will remain president, and J. E. Murray, secretary and treasurer, and, until May 15th next, at least, when their leases expire, the stores of the New York Sporting Goods Co. and Baker & Co., which almost face each other on Warren street, will be continued. It is, however, the intention of the New York Sporting Goods Co to establish a chain of branches, the first of which probably will be opened on 125th

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street, New York City, within the no

To permit of the absorption of Baker Co. and to carry out the enlargements the are planned, the capital stock of the Spor ing Goods company will be increased fro \$100,000 to \$500,000, of which \$100,000 w be paid for the Baker business.

Both concerns are best known in t sporting goods and bicycle and motorcycle trades but have also handled automobil accessories, into which it is not impossible they will go more largely.

Capital Dealers Form Second Association Dealers in the capital who retired from

the Washington Automobile Dealers' As sociation because of differences arising over the annual show, have formed the Wash ington Automobile Trade Association which, it is stated, "bears no animosity toward the other body.

The officers of the new organization and as follows: President, Joseph M. Stoddard Cook & Stoddard Co.; treasurer, M. Y. Po lock, Pollock Car Corporation; secretary Robert H. Martin, manager Buick branch board of control-Claude Miller, Mille Bros., W. S. Keeler, Zell Motor Car Ca and H. B. Leary, Jr. In addition to those named, the charter members are: Mille Bros. Auto & Supply House, Foss-Hugher Co., Locomobile Co. of America, Bartran Electric Garage, Luttrell Co., Commercial Auto & Supply Co., David S. Hendric Co., Inc., and the Overland Washington Motor Co.

Firestone Takes Over Washington Dealer

The Washington (D. C.) branch of the Meeley Rubber Co. of Philadelphia, was taken over last week by the Firestone Tim & Rubber Co., of Akron, and will be continued as a Firestone branch. It will be charge of J. J. Haas as manager.

Splitdorf to Add Three More Branches

The Splitdorf Electrical Co., of Newark N. J., has decided to still further enlarge its system of branch houses and service stations. To that end, it will immediately establish branches in Cincinnati, Minneap olis and Dallas.

To Open Kelly Truck Branch in South

The Kelly-Springfield Truck Co. is make ing ready to open a branch and service st tion in Memphis. Tenn., where hitherto has been represented by a dealer. Quarter have been leased on Linden avenue.

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A. E. Flavell has been appointed agent for the Jeffery cars in South Africa. He located in Cape Town, where he long has been established in the automobile bush



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#### BUILDING ONLY FOR GOOD TIMES.

"While business conditions may not be ideal, I am sure better times are not far off. The concern that can do business only in good times is a pretty poor proposition."

These are remarks credited to John N. Willys, head of the several enterprises which bear his name, and they are remarks full of suggestion. When times are what are popularly termed good, and particular articles are in demand, it is no great trick to find buyers for them. Real fire strength and real ability are demonstrated in times of depression, or whatever else may pass for that condition. Faith, ambition and enthusiasm are priceless virtues, but some each in itself, or all of them collectively, will not fully serve it the purpose; too often they lead where even angels fear to

They permit to be seen only the sunshine, never the shadows, and yet there are many days when nature herself does not smile—days when winds blow, rain falls and the sun does not shine. Weatherproofs and umbrellas are then made necessary; and much of the mischief that is caused when the industrial sun fails to shine is due to the failure of men to realize that even in commercial life provisions against foul weather are necessary. It is the man who is provided with them who realizes that "the concern that can do business only in good times is a pretty poor proposition."

To be enthusiastic is well, but to be wisely enthusiastic is better. Nowadays, so much is made of enthusiasm that at times it would appear that a grin, a cheer and a banging of cymbals are sufficient to overcome all obstacles, to dissipate all clouds and even be made to serve as a substitute for reserve capital.

It is that sort of thing that is largely responsible for waves of business depression. It leads men to see only sunshine and rainbows; to over-extend themselves and their resources; to over-produce and generally to contribute to their own undoing. Its effects are being felt in the automobile industry, and those who are feeling them most keenly and who, because of the fact, can now see more plainly cannot fail to see where they have erred. They had builded only for good times, of which they saw no interruption.

Their discomfiture should serve to good purpose even those who are better placed—those who realized that skies become overcast and rain sometimes falls and that protection against it is necessary; it will increase their appreciation of such protection and their confidence in themselves and in their policies.

#### PASSING OF THE PLAIN TREAD TIRE.

Unless all signs fail, the plain tread tire, if not doomed, is due for diminished and diminishing use. It is plain to all who have eyes to see that the non-skid tire has gained, and is gaining, great ground and, according to trade reports, there never was a period in which it gained so much favor as during the twelvemonth now nearing an end. In the natural order of things, it will cause no surprise if within another twelvemonth it should constitute the bulk of tire production; certainly, the tendency has set strongly in that direction.

The reason for this state of affairs, and for the indications that are so plain, is not far to seek: The "Safety First" slogan which is now being dinned in the public ears is having its effect. Not that motorists have not known the dangers of skidding, but because, as a class, they have not thoroughly appreciated them; the dangers are very real, and in the form of wet or greasy highways are too numerously present, and the perils are shared alike by the occupants of cars and their fellow users of the common thoroughfares. None can tell when or where the wet or greasy pavement is likely to be encountered, and it is primarily due to this realization that the non-skid tire is gradually gaining the ascendancy.

Corrugated or otherwise roughened rubber surfaces will wear smooth, however, and for that reason, among others, the non-skid tire will never take the place of or materially lessen the demand for tire chains, or other metal non-skids, but it is certain that, being in the nature of at least semipermanent equipment, the non-skid tire will add several degrees to the safety of the highways. Indeed, it will not be surprising if, sooner or later, laws are passed requiring its use, for the fearfulness of skidding is not to be denied or minimized.

The advance of the non-skid, therefore, should be heartily acclaimed.

#### GARAGE NO LONGER BARRIER TO INSURING AS FIREPROOF

Fire Insurance Exchange Now Permits Buildings Containing Garages in Fireproof Manufacturing Schedule—The Conditions.

The maintenance of a garage in a building which otherwise comes within the Fireproof Manufacturing Schedule. adopted February 24, 1913, by the Rate Committee of the New York Fire Insurance Exchange, no longer bars the building from the classification; whereas the extent to which the building might house automobiles was limited and garage conditions were barred, all restrictions have been removed, provided the building otherwise comes within the Fireproof Manufacturing Schedule. It includes all garages in which less than six hands are employed in repairing.

In rating risks with automobile occupancies on the Fireproofing Manufacturing Schedule the following rules will be effective: "Should the occupancy either in whole or in part be that of a public garage condition, a charge for such a condition of .05 to the building and .10 to all contents shall be made, less 20 per cent. if less than six hands are repairing on premises. Charges for automobiles in both public and private garages shall be made as per the regular Exchange rules, based on the full capacity of the building in all cases except private business garages, carriage factories and buildings used for show room purposes only and in which all automobiles are without volatile oils in the tanks except that from one machine to 15 per cent. of the total number of machines in the premises may have gasolene in the tanks for demonstrating purposes.

"In the three excepted cases noted—namely, private garages, carriage factories and automobile show rooms with dead cars—the charges for automobiles will be based on the actual number of cars with gasolene in tanks found in the building with a warranty for the number of such cars stored. In all cases, in figuring the automobile charge to building 60 per cent. of the gross charge shall be deducted and in figuring the charge to contents 40 per cent. of the gross charge shall be deducted; the final charge to be applied to all floors alike.

"If, however, the building is but onestory in height, with or without basement, a deduction of but 40 per cent. shall be made from the gross automobile charge for the charge to the building and a deduction of but 40 per cent. from gross automobile charge for the charge to the contents. Also, in figuring the basis rate for the con-



Jan. 2-10, New York City—Importers' annual automobile Salon in Hotel Astor.

Jan. 3-10, New York City—Automobile Chamber of Commerce's national automobile show in Grand Central Palace.

Jan. 4-5-6-8, New York City—Annual winter meeting of the Society of Automobile Engineers.

Jan. 7, New York City—Eleventh annual meeting of the Motor Accessory Manufacturers in the Waldorf-Astoria.

Jan. 7, New York City—Sixth annual banquet of the Motor & Accessory Manufacturers in the Waldorf-Astoria.

Feb. 7-14, Cincinnati, O.—Automobile Trade Association's show in Union Central Life Building.

Jan. 8, New York City—Annual banquet of the Society of Automobile Engineers in Hotel Plaza.

Jan. 10-16, Milwaukee, Wis.—Milwaukee Automobile Dealers' Association's sixth annual automobile show in the Auditorium.

Jan. 10-17, Cleveland, Ohio—Cleveland Automobile Show Co.'s annual show in Euclid Square Exposition Hall.

Jan. 10-17, Philadelphia, Pa.—Philadelphia, Pa.—Philadelphia Trade Association's show in the Metropolitan building.

Jan. 20-24, Baltimore, Md.—Baltimore Automobile Dealers' Association's show in the Fifth Regiment Armory.

Jan. 12-17, Bridgeport, Conn.—Second annual show in the State Armory.

Jan 24-31, Chicago, Ill.—Automobile Chamber of Commerce's national automobile show in the Coliseum and First Reginent Armory.

Jan. 24-31, Rochester, N. Y.—Rochester Automobile Dealers' Association's annual show in Exposition Park.

Jan. 24-31, Montreal, P. Q.—Montreal Automobile Trade Association's pleasure vehicle show.

Jan. 26-31, Scranton, Pa.—Automobile show in the State Armory.

Jan. 17-24, Detroit, Mich.—Automobile Dealers' Association's show in the Ford Building.

Jan. 31-Feb. 7, Minneapolis, Minn.—Minneapolis Automobile Trade Association's seventh annual show in National Guard armory.

Feb. 2-7, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's pleasure vehicle show.

Feb. 3-7, Kalamazoo, Mich.—Kalamazoo Automobile Dealers' Association's fifth annual show in the State Armory.

Feb. 3-7, Montreal, P. Q.—Montreal Automobile Trade Association's commercial vehicle show.

Feb. 4-7, St. Joseph, Mo.—St. Joseph Automobile Show Association's show.

Feb. 9-14, Seattle, Wash.—Annual show in State Armory.

Feb. 9-14, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's commercial vehicle show.

Feb. 14-21, Pittsburgh, Pa.—Pittsburgh Automobile Show Association's fourth annual show.

Feb. 16-21, Kansas City, Mo.—Annual show.

Feb. 18-21, Bloomington, Ill.—McLean County Automobile Club's show.

Feb. 21-28, Newark, N. J.—New Jersey Automobile Trade Co.'s show.

Feb. 22-March 1, Hartford, Conn.—Automobile Dealers' Association's show in Park Casino.

Feb. 21-March 4, Cincinnati, O.—Automobile Dealers' Association's show in the Music Hall.

Feb. 23-28, Omaha, Neb.—Omaha Automobile Show Association's annual show.

March 2, 3, 4, Cincinnati, O.—Automobile Dealers' Association's commercial vehicle show in Music Hall.

Mar. 9-14, Des Moines, Ia.—Automobik Dealers' Association's annual show.

March 7-14, Boston, Mass.—Boston Artomobile Dealers' Association's 12th annual pleasure car show in Mechanics Building

March 17-21, Boston, Mass. — Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show is Mechanics Building.

tents of such a one-story building, a deduction of but 20 per cent. from the gross basis rate, in place of 40 per cent., shall be made.

"Gasolene conditions as reported by the Board shall be charged for as per regular Exchange rules, less a 60 per cent. deduction from the gross charge for the charge to the building and less 40 per cent. from the gross charge for the charge to the contents, except in a one-story building where the deductions will be 40 per cent from the gross charge for the building charge and 20 per cent. from the gross charge for the contents charge. In addition to these figures the ordinary rules and regulations applying to the Manufacturing Schedule will be effective."

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#### ADMINISTRATION'S POLICY TOWARD BUSINESS OUTLINED

Secretary Redfield Dispells Fears of "Persecution" — Holds Out Hope of Price Maintenance—Helpful Investigation.

"What about price-cutting? What about the government and big corporations? What about business?"

All these are pertinent questions today. The ship of state is sailing under a new pilot and with a new crew and at the outset of the voyage there was speculation which amounted to a business cautiousness in some instances. There were calamity howlers and pessimists and a change of Federal administration was held up a bugaboo.

But that the bugaboo business was all wrong is asserted by Secretary of Commerce William C. Redfield, who in his annual report just issued throws an assuring light on the relations between the government and business. Instead of decrying against big business, he says the purpose of the department is to ascertain the exact status of affairs and the conditions which will bring the most good to the greatest number.

#### Diverse Opinions on Price-Cutting.

As to price-cutting, he says there is great diversity of opinion, and that the investigation which is now being conducted may or may not lead to the legalizing of price-fixing; but the government is going to find out what is best—then do it. An investigation of trade agreements is in progress to ascertain what agreements are in aid of competition and should be exempted from the Sherman law.

"There is a growing question in the minds of experienced and thoughtful men," says Secretary Redfield, "as to whether the 'trust' form of organization is industrially efficient and whether bigness and bulk are always necessary to production at the lowest cost.

"It may be conceded that massing of capital and the grouping of great quantities of labor have certain elements of efficiency. They permit research on a large scale. They do away with excessive expense in the maintaining of separate offices and numerous sales organizations. They provide means for the purpose and use of apparatus that can only be employed where production is large. All these things and others like them are unquestionably true and account for much that has been done in promoting the great industrial combinations that are so largely discussed among us.

"But it is doubtful, at best, whether these

#### the elements are all the factors t

favorable elements are all the factors that exist and whether there does not come a point of maximum efficiency at minimum cost beyond which an increase of product means an increase of cost per unit of the product. It is significant that some of the great trusts have ceased to exist; that others pay but moderate dividends, if any, on their securities, and that side by side with the most mighty and supposedly the most efficient of them have grown up independent organizations quite as successful and perhaps earning even more upon their capital than their powerful competitors.

#### Small Concerns Often Best Earners.

"Furthermore, it is undoubtedly true that many of the most profitable businesses in the country are those of moderate size, and this is so even in lines where large concerns exist of apparently less earning capacity.

"There is no criticism here of 'big business' as such, but merely the question as to whether 'big business' has not its very marked limitations and whether there are not cases where bigness is rather less desirable than efficiency.

"It is not necessary to recite the factors which are believed by many to limit economical production in the overgrown enterprise, particularly if its overgrowth be gained by the aggregation of what were unrelated parts.

"The purpose of the Bureau of Corporations is to study patiently into the historical facts, financial facts, economic facts, facts of human welfare and human productiveness, facts concerning equipment, handling, storing, selling, management, and the like, in order that we may know whether these bulky things that we have so much feared are in an economic sense real giants in strength or whether they are but images with feet of clay.

#### Economic Laws Stronger Than Statute.

"It is of the utmost importance that the laws which govern these things should be made known, for without knowledge of those laws legislation may be vain. It is a common truth that economic laws are stronger than statute laws. There can be no objection, therefore, on the part of anyone, whatever his views of industry, toward a study which shall determine the truth, which truth, if it be indeed the truth, must itself determine in the final analysis the course which the legislature and the executive may wisely take concerning these matters.

"It is important that we should know the truth about the fixing of retail prices and as to whether giving the privilege of so fixing the prices to a manufacturer tends toward monopoly or does not so tend. Men who are sincere and well informed do not think alike on this problem, but whatever their views it will be agreed that no thorough study has ever been made of the subject in this country. Nations abroad are said to favor by law that which we forbid. The law with us is for the time fixed by the decision of the Supreme Court that the fixing of retail prices on the part of manufacturers is unlawful. If, however, new legislation should in the future be required, it is important that the truth be known lest injustice be done, not so much to the manufacturer as to the consumer.

"Some men, well informed, argue that the fixing of retail prices under conditions where competition in manufacture exists tends to promote competition. Others say that the refusal to permit the fixing of retail prices tends to monopoly because in the cut-throat competition certain to follow obviously the stronger competitor will survive and may eventually have the business in his own hands, for the law forbids the making of agreements to maintain prices.

"Such being the views expressed by thoughtful men on a matter in which every consumer is interested because he must needs buy such articles, it is important that the subject should receive thoughtful study, and this the Bureau of Corporations purposes to give to it."

#### Difference of State Laws a Handicap.

The government recognizes the undesirability and the injustice of so much varying State legislation regarding corporations and the department is investigating this conflict of laws. The secretary continues:

"The Bureau proposes, therefore, to make an exhaustive study of the laws of the various States on this subject and to prepare a model system of regulation of foreign corporations, with a view to cooperating with State legislative committees in the modification of their laws. It is believed that if, as a result of this investigation, the Department is able to advise corporations doing an interstate business that at least in a number of States (naming them) a uniform system of regulation of foreign corporations has been established, a great and constructive work will have been done.

"An investigation of trade agreements is also in progress, with a view to establishing some facts as to what agreements, if any, apparently in restraint of trade, are really in aid of competition and should be exempted from the operation of the Sherman act.

"There is also the investigation now pending with reference to the merits and demerits of a condition which prohibits a uniform price from being fixed by manufacturers and jobbers, binding upon retailers, as to articles of their manufacture."



#### TELLING TRUTH TO CUSTOMER

Fair Dealing in Used Cars and Results that May Accrue-The Attitude that Works Lasting Harm to the Car and the Dealer as Well.

When you sell a used car to a customer, what do you tell him? Do you tell him it has been overhauled, rebuilt, cleaned up or not touched at all Whatever you tell him, is it the truth? If it isn't, you are building a flimsy structure for the future housing of your business.

If it happens to be a car of the same make you are selling and if it happens to be a high-priced vehicle it is not impossible that the buyer would rather have your used car than a cheaper new car. If so, what is he going to think if he finds the used car is not as you have represented? Your manufacturer has built a reputation for honest values and you should enjoy it with him, but by misrepresenting a used car to a buyer you have injured your own reputaiton and that of your whole line of cars. That it pays to tell the truth is emphasized by the Pierce-Arrow Motor Car Co. in a message to its dealers, in which it says:

#### Responsible Agents and the Used Car.

"Let us get away from the automobile business for a few minutes and consider the purchase of a piano. You, perhaps, want to buy a piano as a Christmas present for your wife. You have a reasonable amount of money to spend but not enough to purchase a new Steinway. Yet a Steinway is what you would like to have. You go to your dealer and he shows you a second-hand Steinway. It has been done over and looks almost like new. Perhaps the ivory of the keys is slightly yellow, but there is nothing else to indicate age. You try the touch. It seems all right to you. The tone is perfect. Your dealer tells you the piano is in perfect condition and only slightly used.

Beside the Steinway stands a perfectly new piano of an inferior make; its cost is but half of the original cost of the Steinway, no more than you can purchase the Steinway for as it now is.

#### Which to Buy? The New or the Used?

"Which will you buy? The new piano, the condition of which is certain, or the used piano that you really want? There is no question of first cost, the only question is, Is the Steinway as it is represented to be? Can you take your dealer's word for its condition?

"Does not the man who is in the market for an automobile ask himself the same question? If he can afford a new Pierce-Arrow, well and good; he knows the reputation of the Pierce-Arrow Motor Car Co. If he wants a Pierce-Arrow but cannot afford a new one, he may purchase a used car of that make-if he can feel sure that it is as represented. That is where the personal responsibility of the Pierce-Arrow agent, as distinguished from that of the Pierce-Arrow company, comes in.

#### Telling Customer Exact Conditions.

"It is better to scrap a used car, of any make, than even to give it away under false pretenses. If you don't know the condition of the car, let the prospect know that you don't know. If he wants to take a chance, well and good, but make sure that he is taking it with his eyes open; make sure that he can have no reasonable "comeback" on you. If the car has been thoroughly rebuilt in your shop; if you know its condition is, mechanically, as good as new, say so, and back your word with a guaran-

"Don't sell a superficially overhauled car as a rebuilt car; not even with a guarantee. The man wants the car to use, not to store in your repair shop-even if such storage

"With a new article, it is the responsibility of the manufacturer that carries the

most weight; with the used article, it is the responsibility of the agent."

#### SHARING PRICE REDUCTIONS A SHORT CUT TO GOOD-WILL

Every dealer, garageman and car owner was not pleased when the price of gasolene began to climb a year and a half ago; it cost the car owner more for his fuel, and the man who retailed the "gas" was getting a smaller percentage of profit as a general rule. But when "gas" dropped-as it did quite generally-not long ago there was presented an opportunity for the acquirement of good-will that was grasped by few dealers.

When "gas" came down, two situations presented themselves. Either the car owner was going to pay the dealer or garageman a bigger profit or the car owner was going to get the benefit of the cut in the wholesale price. Who did get it? In most cases it was the retailer of the fuel, and what the customer may have thought if he knew of the "cut" is problematical.

#### How Tire Dealers Made Selves "Solid."

This opens the way for emphasis upon one valuable means of securing and retain ing the good-will of the car owner; when the wholesale price of goods is reduced why not give the customer the benefit of If the retail price was fair before the "cutthere seems no logical reason why the figure should not be lowered in accordance If this is to be done and the customer is given a pleasant little letter of notification to the effect that he is to pay less for "gas" in the future, he is going to be a much pleased man-or he ought to be ,anyway.

The recent disturbance of tire prices of fered a similar opportunity. When the manufacturers informed the dealers that the reduced prices were to be extended back ward to the first of the month, several tire dealers made themselves "solid" with the trade by giving the same rebate.

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#### 10 BUSINESS COMMANDMENTS

Ohio Repair Company Codifies Its Sentiments as to Efficiency—Plain,

Common - Sense Maxims of

Comprehensive Scope.

"Yes, this efficiency stuff is all right outside of the fact that it's all bunk; nobody reads it. If they do they don't find anything they didn't know before they read it," said a man who was firmly convinced that he was a top-notch business man and couldn't be better if he tried. But he was wrong in one point, at least; he did not know the value of Wide-Awake reading.

It is safe to assume that nearly every business man knows the rights and wrongs of business methods—generally, at least; but there is no living man who cannot get an inspiration out of an efficiency hint. It doesn't tell him anything that is necessarily news, but it wakes up an idea that otherwise would remain dormant.

#### Commandments That Wake Up Ideas.

On this principle the West End Repair Shop, of New Philadelphia, O., has compiled a Ten Commandments of Business. Any man with a knowledge of business knows about all there is in them, but having them around where the employes and members of the company can see them is one of the stepping stones in the ladder of success which this concern is mounting.

The maxims are plain, common-sense statements; they cover various phases of the business, and the last words in the code are all important. They are: "Don't loaf—Read!" The company knows that many a man in leisure moments is by nature prone to loaf and that this same man can improve himself in no way more than by reading the right thing. These are the Ten Commandments:

"Follow up your orders and see that you get them in some kind of time.

"Automobile people like speed in all things.

"Good system with as little work in the office as possible.

"Keep your time for your customers and not for system.

"Do not charge a man for that which he does not get, but see that he pays you all that there is coming to you.

"Never send out a job till you know it is finished

"When a man comes after his car have his bill ready. He may want to pay.

"The last three words in the Bible are 'Get the money.'

"Keep your promises, and when it comes to paying make your customers keep theirs. "Keep posted; it pays. Don't loaf: read."

#### STOPPING A LEAK THROUGH WHICH PROFITS OFTEN SLIP

A car owner entered a dealer's establishment and said something was the matter with his car; the dealer had a mechanic look into it and the man in overalls was not long in discovering that a new part was needed. Neither did it take long to learn that that particular part was not in stock; it had been permitted to "run out."

"But I'll get it for you right away," declared the dealer, as a shadow of disappointment made its appearance on the car owner's face. "I'll get it by express." The dealer did so. He telegraphed and had the part by the next afternoon. Service? Perhaps—but costly.

The dealer should give service, but he should not bankrupt himself in the doing. If he is a good business man he knows that he must give service, but if he is a good business man he also will know that getting parts by express is a leak in the cash drawer.

A dealer orders parts rushed by express and the charge is \$27; by freight they would have been \$7. Who pays the difference? The dealer or the customer? There are few dealers who would dare attempt to make the customer pay for expressage, and the only alternative is for the sum to come out of the dealer's profits. Why is this necessary?

#### Necessity of Keeping Up Stock.

It is not necessary—in fact, it is necessary that express shipments be as few as possible. They are necessary only in case some part is not in stock, but it is the dealer's business to see that parts are in stock. In every stockroom it is someone's duty to keep the stock up, not to let it run down to the danger point. If the dealer has no system which requires a stockman, or a man responsible for the keeping up of stock, no more important move can be made than to get some such system in working order at once.

Service counts, but service is impossible without system, and when it stops such leaks as express charges it serves doubly.

#### "SAFETY FIRST" WINDOW THAT BROUGHT INCREASED BUSINESS

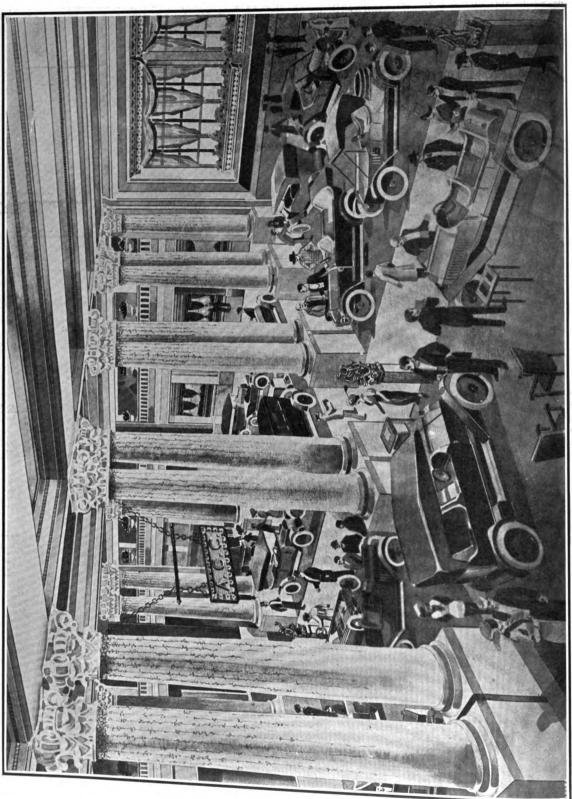
The 20th Century Motor Car & Supply Co, 121 South Lafayette street, South Bend, Ind., recently had a "Safety First" window display that not only attracted unusual attention from passers-by, but also resulted in a greatly increased volume of sales on the articles displayed.

In the foreground there were two broken wheels, the result of a skidding accident of a few days before. Resting against these broken wheels were cards that told the story of the incident in a very few words. The natural suggestion was "Weed chains," of which a plentiful supply was shown. In addition to chains, the display included bumpers, electric signals, fire extinguishers, towing cables, and license brackets.

Incidentally, it is worth noting that this concern pays special attention to window displays, changing them frequently and keeping windows spotlessly clean.

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#### "DO IT WITH A SMILE OR DON'T DO IT AT ALL"

# Reilly Tells His Salesman Protege of the Harm That Lies in Favors Given Begrudgingly—Making the Customer Feel That He is Not Entitled to What He Asks for is Not Productive of Good-will.

Tommy Trumbull tried to look nonchalant and unconcerned as he walked manfully into the salesroom office and deposited a 15-inch package carelessly upon his desk. Then he sat down and started thumbing over some prospect cards. But thumb as he would, the silence was terrific; he could feel it.

When he stole a glimpse out of the tail of his eye he got red and thumbed the cards harder than ever. He might stand Reilly looking at him, but Nellie—that was too much; she was a girl.

#### Tommy Yields to Yuletide Persuasion.

"What'd you get her, Tommy?" asked Reilly.

"Get who? What do you mean?"

"I don't know her name," slowly responded Reilly, who continued to work at an aggregation of figures.

"Come on, Tommy! Let's see it," coaxed Nelly.

"Aw, what do you kid me all the time for?" demanded the youthful salesman, but he nevertheless reached for the box and gingerly and carefully began untying the long, pink string.

"There! Isn't that a dandy?" he set a glistening copper chafing dish, tray, fork and spoon upon Reilly's desk. Reilly emitted a long, low whistle of admiration, but Nellie just Ah-h-h-ed! and Oh-h-h-ed as only a girl can.

"That's an awful investment, Tommy. Supposing she goes back on you," taunted Reilly.

#### Hedging in Case Things Go Wrong.

"She won't-not after she sees it! Believe me!" asserted Nellie.

"Take it down and get my money back," laughed Tommy.

"Sounds well," was the dealer's pessimistic comment, "but this 'get your money back' doesn't always go. Bet that set you back 15 or 20 cases."

"Good guess!" smiled the youth. "But I can get my money back if I want to—if I want to, mind you."

"Looks risky to me," added Reilly in a further attempt at discouragement.

"Kruther's treats you square," asserted Tommy. "I bought a suit of clothes there once and wore 'em to a dance, and even then they took them back."

"So?"

"And they were glad to do it—said they were, anyway."

"Well," was Reilly's final dig, "they made



TOMMY TRUMBULL TRIED TO LOOK NON-CHALANT AND UNCONCERNED

up for it on the chafing dish. But it's good business, good business, boy, and I'm glad to see you recognize it. Remember it."

#### Drygoods Rules Fit Car Salesroom.

"What do you mean?"

"Treat people the way Kruther's has treated you, that's all," replied Reilly. "It



"BASTIAN WILL MUMBLE 'I SUPPOSE I CAN DO IT'"

works just as well in our store as it does in theirs."

"What do you mean—take a car back after a man has used it?"

"Not necessarily," explained Reilly. "Just be pleasant about it, that's all."

"Oh! I see."

"That's a rule of the house here, Tommy, but I guess you fitted the rule pretty well before you came here."

"I hope so. But why a house rule? I mean, why is a rule necessary?"

"If you would get into contact with some of the dealers along the row you wouldn't need to ask that question," answered Reilly. "If it were a rule in more places it would be a good thing. Too many of the dealers in town—and in other towns, too—work things the other way about, especially in the way of service."

#### Find Pleasure in Dealing With Trade.

"Kind of crabby, are they?" asked Tom-my.

"Not exactly crabby," replied Reilly, "but they can't seem to feel the way they should about certain matters. I believe a man who deals with the public should make the public believe he takes pleasure in dealing with it, no matter whether he is doing something or refusing to do something. If I am going to do something for a man I make it a plan to give the man an impression that I am glad to do it, and if I have to turn him down I do it as cheerfully as possible. I'll either do a thing or not do a thing, but if I do it I'll do it right.

"The point applies principally in the doing of things, however. Every dealer who ever sold as many as a dozen cars is always being called upon to do a lot of little things for his owners. Some of them are properly classed as service and some are not, and some of the dealers don't warm up to doing the little things—or the big ones, either."

"Who, for instance?"

#### Grumbles When Asked to Do a Favor.

"Well—not to be repeated, of course—there's Bastian. Bastian is a regular grouch, anyway, but that doesn't alter the situation. If a man goes down to Bastian's and wants a cotter pin put in the motor, Bastian—he knows he ought to do it—will mumble something about 'I suppose I can do it' and finally will put in the pin. Then he hasn't the nerve to charge for the thing and tells the man there is no charge. The man goes away, but he would a darned sight rather have paid for it.

"Bastian seems to feel that the owner is imposing on him by asking for any trivial favor, and the owner realizes that he is asking a favor, yet he knows that he has a



moral right to ask for it. What is the result? The owners get so they hate to ask Bastian for anything and even get so they hate to go near him at all. If he feels that he is not supposed to do the things he is asked to do, why doesn't he refuse, and explain why? But if he is going to do those things, why can't he do it cheerfully and give the owner an impression that the dealer is glad to have him drop in?"

"I know old Bastian," interrupted Tommy.

#### Tire Branch That Wears a Smile.

"Then there's the Everwear tire branch, downtown. They're just the opposite. If you go down there with a tire that you think has busted through a defect, they act as if they wondered why you hadn't come in before. They will take the tire in and look it over-they make adjustments right on the spot-and will tell you whether they think you are entitled to a new casing. They seem pleased that they have been given an opportunity to do you a favor. And if the tire doesn't prove defective they tell you so, but you really don't mind it, they do it so nicely. Their tires are a little higher priced than some others, but the line stands strong in this town. And it isn't the quality of the tire that does it, either."

"You took them on a while ago, didn't you?"

"Yes, I did, and that Everwear smile was one of the reasons. It's the same with Kruther's. When you took that suit back I'll bet they hated like the devil to take it back in stock after you had worn it—"

"But it didn't fit right!"

"That may be, but, just the same, it isn't likely that they wanted to take it back."

"And I got my money back, too. They couldn't show me anything else I liked."

#### Often Necessary to Hide Displeasure.

"It takes salesmanship to smile under those circumstances, Tommy; but don't you see what it meant. You were a good customer of theirs; you had dealt with them before; they wanted to keep your trade for the future; it might have been straining a point to take the suit back, but when they decided to do it—and it probably didn't take many seconds to decide, either—they took it back as if they were glad to do it. Back in his throat the salesman may have been whispering uncomplimentary things about you, but you never will know it. You will always believe they gave you a fine deal.

"Kush Gratz. who runs that cig2" stor/ at First and Montgomery, is a man I can't stand, and just because of the way he gives away matches. Anybody knows that a cigar store man is supposed to give matches to his customers—at least, the customers think so. But if you ask Gratz for a box of matches and don't happen to buy something at the same time he will hand them out with the blackest look on his face you ever saw. He does it but you wish he hadn't done it. You feel as if you had begged something and had been made an object of charity.



"THEY SEEM PLEASED WITH THE OPPORTUNITY TO DO YOU A FAVOR"

"One day I asked him if he didn't want to give them to me. 'I'll give them back to you, Kush, if you don't want to give them to me.' 'Oh, no! Take 'em!' he said. 'Well, you don't act is if you wanted me to have them,' I replied. 'Sure! Sure! Take 'em!' and he pushed me another box and actually laughed. I guess it scared him a little to think that he might lose a customer. He was willing to drop his unwillingness when he realized what it meant. But I quit him; I couldn't stand him."

#### "If You Do It at All, Do It Right."

"He isn't much like the Universal stores," enthused Tommy. "They'll give you all the matches you want, sell you postage stamps,



"HE WILL HAND THEM OUT WITH THE BLACKEST LOOK YOU EVER SAW"

or do anything for you, and they act tickled to death to do it."

"That's one reason why they are doing such a business," asserted Reilly, as he studied his shining pate, many times elongated, in the side of the chafind dish. "It all simmers down to this, Tommy: If you can't do it, don't do it; but if you're going to do it, do it as if you meant it. Things done in a begrudging manner were better

not done at all. In fact, they're only had done as it is. They——"

"My ——!" exclaimed Tommy. It grabbed the chafing dish, tray and took bundled them with a rush into the box and tied it up in desperation.

Reilly looked in astonishment at this sudden activity. But when Reilly looked on the window after Tommy had chucked the box under his desk he surmised the reason

A nifty fall suit and hat were swinging down the opposite side of the street. A she passed she looked toward the sale-room—just a peeking little glance—but passed by.

"Gee!" and Tommy mopped his brow "I thought she was coming in!"

#### Motor & Gear Will Become Fischer.

The Motor & Gear Improvement Co. which controls the rights to the Fischer or Magic motor in this country, has applied to the New York Supreme Court for authority to change its name to Fischer Motor Corporation, which, as stated in laweek's Motor World, already has set up offices in the Hudson Terminal Building New York. The application to the count is signed by Arthur E. Bristol, as president.

The Aristos Co., which struck the financial shoals last week, after announcing its intention to build cars using the Magic motor, often has been linked or confused with the Motor & Gear Improvement Co., but Manager Brady, of the Fischer Motor Corporation, states that each was separate and distinct in every way, although they occupied the same office. The Gear & Improvement company, he added, was in no way involved in the Aristos failure.

#### Milwaukee Motor Creditors Reject Offer

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Creditors of the bankrupt Milwaukee Motor Co., Milwaukee, rejected the offer of John C. Coerper and Ernst G. Miller to personally liquidate the concern's indebtedness to various banking institutions amounting to \$70,000, in consideration of a release of all claims of the bankrupt against Miller, Harry G. John and Elise K. John The action was taken at the meeting of December 8th. The trustee was directed to intervene in actions pending in Milwauker circuit court and bring such other actions as necessary for the interests of the bankrupt estate.

#### Kentucky Tire Secures an Ohio Outlet.

The Tenbrock Tires Sales Co. has beef organized in Cincinnati with R. T. Durett 2st president and H. C. Upson as manager. It has leased salesrooms on Eighth street where it will handle Tenbrock tires, the manufacture of which recently was undertaken in Louisville, Ky.

## MOTOR WORLD The bore and stroke of the cylinders are

3½ inches and 6 inches, respectively, and

though the rating therefore is exceedingly

moderate-29.45, according to the A. L. A.

M. formula-the long stroke, and the pos-

sibility of operating the engine at com-

paratively high speed, make possible the

generation of a great deal more power than

that indicated. Well in excess of 50 horse-

power is given off at high speeds. The cyl-

inders, as already has been made plain, are

in a single block, in conformity to the gen-

eral trend in that direction, and the cylinder

head is readily detachable for inspection

The block-cast construction, of course,

makes possible a degree of compactness not

obtainable in any other way, and the effect

has been heightened by the use of a three-

bearing crankshaft of unusually liberal di-

mensions; its smallest diameter at any

working point is 21/4 inches, the crankpin

bearings being two inches in length. Again

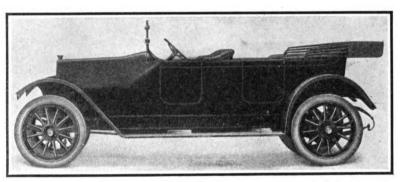
and cleaning.

#### INITIAL L. P. C. PRODUCT BIG "LIGHT SIX" AT \$1,600

Motor Measuring 31-2 x 6 Combines
Three-Bearing Crankshaft, Block
Casting and Detachable Head
—Wheelbase is 135 Inches.

Having completed its organization, the L. P. C. Motor Co., of Racine, Wis., of which William Mitchell Lewis, formerly head of the Mitchell-Lewis Motor Co., is president, at length has practically ready for the market its first product, and though as was stated would be the case it is a "light six," it is such a really big "light six" at such a really small price that it is likely to strike consternation into the hearts of some and bring joy to the hearts of others.

It is "all on," as the foreign motoring



FIRST L. P. C. "LIGHT SIX" WHICH SELLS, COMPLETELY EQUIPPED, FOR \$1,600

fraternity is wont to imply that the price neludes complete equipment, and, by the way, the car bears the distinction of having been designed by Rene M. Petard, who is a distinguished foreign engineer who served with the producers of Fiat, Itala and unic cars; the list price has been set at the exceedingly modest figure of \$1,600—and his despite the fact that the car is not in any sense a small one. The wheelbase is 35 inches.

Probably the most striking feature of the ar, barring its size and its price, is its notor, which is of a quite new type that vell exemplifies the modern tendency towrd compactness and the elimination of xtraneous protuberances. In the abstract, he power plant is the first of its kind to ombine a three-bearing crankshaft blockasting of cylinders and crankcase with deachable cylinder head and unit clutch and earset construction. These, briefly, are ne leading features of the motor which is therwise distinguished by having a rather onger stroke than is usual, "silent" chain ming gear and a dual camshaft housing nd intake pipe.

reflecting the modern tendency toward the elimination of as many parts as possible, the pistons are exceptionally light—134 pounds each—and carry but two piston rings. Valves are all located on one side and are 1 13/16 inches in diameter.

For lubrication, a combined force feed and splash system is relied upon, the oil being positively fed to every moving part, including the clutch and the gearset, from a reservoir that is kept full by the action of the flywheel. A dual magneto furnishes sparks for ignition and is mounted at the left side and operated directly from the camshaft.

at the left side and is at the end of an extremely short induction pipe; it is fed by gravity from a 14-gallon fuel tank located in the deep skuttle. The tank is provided with a reserve compartment holding two gallons and there is a gauge to indicate the contents of the main reservoir. The entire power plant is supported at three points on the chassis frame.

From the engine, power is transmitted through the intermediary of a multiple disk clutch which runs in an oil bath, a threespeed selectively operated gearset and a substantial propeller shaft to a full-floating rear axle of a special type. The propeller shaft is equipped with a grease-tight, fully enclosed and protected universal joint at each end. In connection with the construction of the gearset it is worthy of special mention that no grease is used, the lubrication being entirely by oil. Gear shifting and emergency brake levers are mounted on top of the gearcase convenient to the operator's right hand, the starting wheel being at the left side.

Another departure from what now has come to be viewed as standard practice is the adoption of emergency brakes of the transmission variety. A single band contracting over a drum mounted at the rear of the gear case and operated by a hand lever, fulfills the emergency brake requirements. The service brakes are of the internal expanding type, pedal-operated, and work in 16-inch drums which are mounted on the rear wheels.

The frame is of heavy-gauge hydraulicpressed steel 5/32 of an inch in thickness and consists of two side members in Usection five inches deep and three inches wide, with four stiff cross members of the same dimensions; there is no sub-frame. The frame is supported at the front on the conventional type of semi-elliptic springs and at the rear on three-quarter elliptic members 56 inches in length. The wheelbase is 135 inches and the wheels are shod with 36 x 4-inch tires carried on Detroit demountable rims, an extra rim carrier being included.

The body that will be mounted accommodates six passengers and is of the full streamline type with a deep skuttle set off by a cowlboard containing the various indicating and control devices. The upholstery is of a type that has been styled "semi-Turkish," by way of making plain that though the cushions are amply deep to ensure perfect road comfort, the depth has not been carried to the extreme. Both front and rear seats are divided by arm rests. The auxiliary seats fold down out of the way against the back of the driver's compartment. The weight of the car complete, in touring trim, totals but 3,250 pounds.

Quite as a matter of course, the equipment includes electric lighting and engine starting apparatus, the type chosen being the Entz, which is direct connected and built as an integral part of the power plant. Otherwise, the equipment includes top with dust envelope. Jiffy curtains and Bair bow separators; quick-action, two-piece rainvision windshield; electric horn; robe and foot rails; and the usual complement of tools; spare parts; tire repair kit, and so forth.

#### MOTOR WORLD

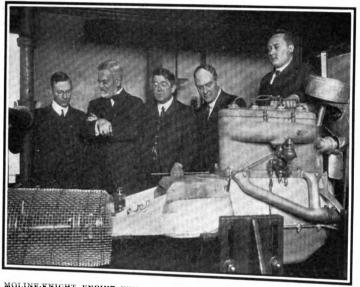
#### **MOLINE SLEEVE-VALVE MOTOR WELL STARTED ON LONG RUN**

Distinguished Company Witnesses Beginning of Test Planned to Last Two Weeks - Motor Kept Running Wide Open.

The hands of the clock pointed to 7:01 on the evening of December 19 when the fourcylinder Moline-Knight motor was started on its test run which, as stated in Motor World of December 4, will last for 336

horsepower. The engine differs from most Knight motors in that its cylinders are cast in a single block and that it is cooled by gravity-circulated water; the lubrication system also is out of the ordinary, there being no oil slots in the bearings, so that the shafts are floated on oil films.

The test is being conducted under the regular rules of the Automobile Club of America, in the testing laboratory of which the run is taking place under the supervision of Herbert Chase, the engineer in charge. The motor will run at all times with wide-open throttle, the resistance of the electric dynamometer being adjusted



MOLINE KNIGHT ENGINE WHICH IS UNDERGOING A 336-HOUR TEST IN THE MOLINE-KNIGHT ENGINE WHICH IS UNDERGOING A 336-HOUK TEST IN THE A. C. A. LABORATORY. HERBERT CHASE, LABORATORY ENGINEER, PROF. E. H. HUTTON, CHARLES Y. KNIGHT, PRESIDENT W. H. VANDERVOORT, OF THE MOLINE COMPANY, AND W. O. THOMAS, CHIEF ENGINEER FOR KNIGHT, FROM LEFT TO RIGHT

hours, or two full weeks-provided the motor does not stop. Up to Wednesday morning it was running and had given no trouble.

The motor was started in the presence of a distinguished company, including W. H. Van Dervoort, president of the Moline company; Charles Y. Knight, D. B. Kilbourne, W. Owen Thomas, chief engineer for Knight; Professor Hutton, of Columbia University; L. M. Bradley, director of advertising of the Moline company; Herbert Chase, R. O. Butterfield and A. F. Marshall, respectively chief tester and chief inspector of the Moline company, and others.

The motor, which was described in detail in Motor World for November 20, has a bore and stroke of 4 and 6 inches and the application of the usual formula gives a rating of 22.6 horsepower, against which the guaranteed rating of the makers, the Moline Automobile Co., of East Moline, Ill., stands out in strong contrast, being 50

to maintain the speed as nearly as possible at 1,100 revolutions per minute. No adjustments are allowed that necessitate the stopping of the motor during the run, and, as is usual in A. C. A. tests, all the details of the running of the engine are noted, though the information is withheld until the conclusion of the test.

Figuring on the power that the motor is developing under the test conditions, it is said that it would propel the car, with its full load, at a speed of 45 miles an hour—a speed which, if it could be maintained on the road, would take a car from New York to Chicago in 24 hours.

#### Sheriff to Auction Indiana Factory.

January 10th has been set as the date for the sheriff's sale of the plant and real estate of the Indiana Motor & Mfg. Co.'s plant in Greenwood, Ind. The sale grows out of an execution for \$30,132 obtained by E. A. McAlpin, as trustee.

#### GARAGE OF ITSELF CANNOT BE CLASSED AS A NUISANCE

New Jersey Judge Declines to Prohibit Erection of Building - Business Lawful, and Objectionable Only When so Conducted.

That a garage is not in itself a nuisance. was the ruling made last week by Vice-Chancellor Backes in a court in Trenton, N. J., in refusing to prohibit the erection of a garage in response to the requests of owners of property near the site of the proposed structure. Thomas M. Barr proposed to erect the building in Metuchen, N J., and was opposed by Michael Ronan and others, an injunction being sought under an implied restrictive covenant upon lands formerly owned by the Metuchen Building Co.

The covenant invoked in the case prohibited the erection of any building costing less than \$3,000, excepting certain specified structures appurtenant to a private residence. There were also a number of occupations and structures which were specifically prohibited on the tract. It appeared from the evidence that there was no general neighborhood scheme to establish a strictly residential section, although that was the representation made when a number of the lots were sold.

The injunction against the garage was sought principally under a clause in the covenant prohibiting the maintenance "of any other nuisance whatsoever." The erection of a public garage was not specifically prohibited, but it was insisted that to permit one to be erected and operated would createa a nuisance.

To read such a restriction into the clause inhibiting nuisances generally, the vicechancellor said, would necessarily require a finding that a public garage is a nuisance in itself.

"This it surely is not," said the court. "It is a place for the housing of automobiles The business is a lawful one, and the presumption is that it will be lawfully carried on. In such circumstances a court of equity will not interfere. If, in the prosecution of the business, a nuisance is created, it may interfere."

#### Exporter Who Seeks Ford Specialties.

F. V. Miller, who is in the export business at 11 Broadway, New York, is anxious to hear from all manufacturers of accessories designed for Ford cars. He is rep resenting a large London supply house which desires to include such Ford special ties in its catalog, which now is in course of preparation.



#### THE DEALER WHO GAVE HIS OFFICE TO A CLERK

#### Metropolitan Distributer, One of the Largest, Dispensed with His Private Office That He Might Get Near the Public—His Only Headquarters Salesroom Desk-Believes in Being "Accessible."

"Accessibility of managers" was held up as a salesroom ideal not long ago by a successful accessory man. He said that accessibility of managers was just as essential as accessibility of parts of a car.

This tradesman has a little office at the rear of his store and sits therein with the door open; anyone who so desires may walk in and see him.

This manager-or proprietor-carried out his idea very well but C. T. Silver, of the C. T. Silver Motor Co., Overland distributer in the metropolitan district, has improved upon it; Silver who recently relocated his business in new quarters at 1739 Broadway, is as accessible as a bulb horn; anyone can reach right out and get his hands on him.

#### Only Office a Desk in the Salesroom.

His accessibility dates from the day he moved into the remodeled building which houses his business; the carpenters were going to fit up an office for him on the second floor, but he put down his foot and said that henceforth he had no office--and his only office is a desk on the salesroom floor.

His attitude is well expressed in a statement he sent to customers pasted into his catalogs and other literature.

"Coincident with the occupation of our new place," it said, "I will inaugurate a new policy of dealing with the public which was impossible at our old place owing to the physical arrangement of the building.

"We have always realized our responsibility to the public, but hope to give proper expression to it in our new place.

"Most men, as their business grows, draw closer into their shells. They surround themselves with an exclusiveness that finally takes on the cloak of the 'public-bedamned.' They draw further and further away from their customers, which in many cases is excusable, due to the responsibilities of financing, time taken up in consultations with branch managers and heads of departments, with executive work and the general scheme of management.

"This order of things I will reverse at our new home. My desk (I will have no office) will be located in the open, on the salesroom floor, and I want every one interested in Overlands, whether an owner, a prospective owner, a booster or a knocker, to personally visit me and tell me everything about the car-the bad things as well as the good. I want the personnel of our company criticized as well as our methods of doing business. In short, our policy is one of the open book. We are making for higher ideals in business and we know we cannot reach these without a democratic sympathy and understanding with those we do business with.

"My only restriction is that I will not permit of my time being taken up for discussion of any other subject but Overland."

#### Dealer Enthuses Over the New Plan.

As to the results, this dealer is quite enthusiastic, and when a Motor World man dropped in to see the proprietor it was not difficult to locate him, for he sat behind a desk at the rear end of the floor. There were one or two other men waiting to see the dealer, but none of them begrudged the wait; it was not irksome, for they had visual assurance that Silver was "busy"; they didn't have to be told; they could

"How does it work? Fine!" he exclaimed. "I wouldn't go back to an office for anything. I've come down here where I can mix with the people who come into the salesroom and where I am in direct touch

with the business from top to bottom. It not only is popular with the trade, but it is doing me good; I enjoy business as I never enjoyed it before.

"Office? No, really, I haven't any office except this desk. Upstairs, where they were going to fix an office for me, are a lot of bookkeepers. When I decided to move out into the open I found a position at the factory for my sales manager and I am doing his work. At one side of me is my wholesale sales manager, where I can keep in touch with his end of the work; I can keep track of what he is doing, and very often I can step in when he is talking to a sub-dealer and say 'Hello' and keep close to the business.

#### Keeps in Close Touch With Business.

"I am down where I can be a contact point between the business and the public; I can see how people come in and whether they have troubles. If a man doesn't think he got just what he should on a repair deal I am right in touch with him and it certainly works well. But busy! Say! I'm so busy I'm making engagements for noon and keeping them at 4 o'clock; somebody's buttonholing me every minute.

"But you must not think I don't like it that way, for I do. It has made a big difference in the business; I can see it grow. It wasn't a growth, it was a jump. When I moved out onto the floor and got into personal touch with the customers, it seemed to cause the sales to take a regular little leap. It seems to have made people feel more like coming here."

Lower down Broadway the present arrangement wasn't so feasible, and Silver says he regrets that he did not make a different arrangement long ago. Perhaps there still lurks in his memory an occasion when

he went to one of those refrigerator, glassfront, uniformed-hallboy salesrooms several years ago on business. They didn't even ask him to sit down, but "made him feel like a chauffeur," so it may be seen that he has first-hand information as to the disadvantages of an inaccessible manager.

"The move really had its beginning in an attempt at economy," he said. "When dealers' commissions began to shrink some time ago I looked around to see if I couldn't save money somewhere. I found that our sales system required a whole lot of books and bookkeeping, and that was changed. Where we used to have six stenographers we have two and I'm the sales manager."

"I've been in your place several times; I got to know your sales manager quite well, but I always wondered what you looked like," said the Motor World man.

"I know it! I know it!" replied Silver. "It was that way with a lot of people; so much so that I got ashamed of myself." And as the Motor World man left, another man walked up and "buttonholed" the

#### Appellate Court Hits at Price Fixing.

Price maintenance suffered another blow last week when the United States Circuit Court of Appeals, sitting in New York City, upheld without an opinion the decision of Judge Ray of the District Court in his overturning of the Waltham-Keene price contract; the action was brought by the Waltham Watch Co. to compel a New York jeweler to maintain the price on Waltham watches. Judge Ray declared that when the watches passed into Keene's hands they became his property and that he had the right to sell them at any price he saw fit. He declared that the act of the Waltham company was monopolistic.

Storage Lien Leads Garageman to Court. Whether Munnich's Garage, Inc., of the Bronx, New York City, forfeited its lien on an Atterbury truck owned by Stultz Bros. is the point at issue in an action which has been brought against the garage in the New York City Court; the garage proprietor claims he is holding the truck for a storage bill of \$171.11, but the owners of the truck claim he forfeited the lien by letting the truck out of his possession. They charge that he unlawfully took possession of the vehicle and "converted" it, and for this they ask damages of \$1,200.

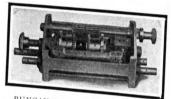
### Firestone Branch Sprouts in Oakland.

Oakland, Cal., has been added to the list of cities in which Firestone branches are being maintained. The store in that city was opened last week and is in charge of H. E. Esterly, who previously was identified with the San Francisco branch.

#### BUNGAY GEAR SHIFTER USES **ENERGY OF COILED SPRING**

Gears Selected with Steering Column Indicator and Shifting Completed by Clutch Pedal Movement-Applicable to Any Car.

By way of eliminating the usual hand lever that has served so long, if not so well, for shifting gears, without the necessity for adding either electrical or pneumatic devices, the Bungay Mfg. Co., of Brooklyn, N. Y., after a deal of experimentation, at length has perfected and has ready for the market a spring-operated gear-shifting mechanism which is unusual in construction and which offers a number of advantages. Not the least important feature of the new device is that it is comparatively light in weight, weighing approximately 18 pounds, and that it can be attached to practically any car without extensive alteration.



BUNGAY SPRING GEAR SHIFTER

In its simplest aspect, the Bungay gearshifter consists of a selector which is placed upon the steering wheel, or, rather, at the top of the steering column, and the mechanism itself, which is enclosed in a small steel box and bolted in a position with relation to the gearset facilitating its connection with the shifter rods normally operated by the time-honored hand lever. The principal feature that distinguishes it from all other automatic gear-shifting devices is that the energy for its operation is stored in a spring which is compressed with the last half of the downward movement of the

The whole mechanism, with the exception of the steering column selector, of course, is shown by the accompanying illustration, which makes plain that it is of relatively small size and light weight. The shifting energy is stored in the spiral spring A which is held between the two selectors designated B. These selectors are rotated by the control shaft which leads to the steering column through the gear C.

In operating the device, the last half of the downward movement of the clutch pedal which is linked to the shaft D stores the necessary energy in the spring. Forward movement of this shaft compresses the spring, in either direction according to

the speed which has been in operation, through the links E and the levers F, the cross head G being pinned to the shaft D and the block H sliding freely on the same shaft. The selectors B are held in the neutral position by stops but are released when an opening in the selectors registers with a stop. The released selector then carries backward or forward the fingers J. which are integral with rods K which, in turn, slide the gears directly.

Free operation of the clutch without disturbing the position of the gears is possible in the first half of the pedal movement. During the last half of the movement, however, the selectors are brought together, compressing the spring and drawing the gears into the neutral position. At the completion of the downward stroke, the indicator on the steering column can be operated freely for the purpose of selecting the required gear and in all other positions of the clutch pedal it is locked by the engagement of the selectors with their stops. In another style of control, a lever or a button can be set in advance to indicate a required speed which then will be obtained automatically upon complete depression of the clutch pedal.

### France Gains but Fourteen Thousand Cars.

Official publication of the tax returns shows that to date there are 90,959 automobiles in France, as against 76,771 during the year 1912. Most of them, of course, are located in the Seine department, which includes the city of Paris, in which the number increased to 15,219, a surprisingly small gain of only 1,830 over the record of the previous year. These figures best serve to show that were it not for its gigantic expost business the French automobile industry would be "small potatoes" indeed.

## More Room Provided for Corbin-Browns.

The Corbin Screw Division of the American Hardware Co. just has completed a sixstory brick addition, 100 x 120 feet, to its already big plant in New Britain, Conn. The new building, which will be ready for occupancy January 1st, will be devoted chiefly to the production of Corbin-Brown

# Indianapolis Tradesmen Reelect Officers.

Having proved themselves the men for their respective offices, all of the officials of the Indianapolis Automobile Trade Association were reelected at its annual meeting last week. They are as follows:

President, Frank L. Moore; vice-president, Herbert Hatton Rice; secretary, F. Ellis Hunter; treasurer, Fred I. Willis; directors, George A. Weidely, Harry L. Archey, Bruce M. Wylie, Leslie L. Banford, R. P. Henderson.

#### MOTOR WORLD

# FIGHTING HARDER WHEN THE CLOUDS OF BUSINESS LOWER

Men and Concerns That Gain Consistently When Others Hunt Place to "Curl Up and Lie Down"—
What One Company Did.

"When the first whispers of a business depression begin to be heard," says Printer's Ink, "there are always concerns that look around for a soft place to curl up and lie down. They pull in their lines, shorten their sales force and cut down their advertising.

"But there are also other concerns that see in identically the same unfavorable conditions a reason why they should redouble their efforts to get and increase business. That is why, when there is talk of bad times, if you inquire among your friends, you will hear very conflicting reports. Some are complaining of decreases in sales, while others are 'pointing with pride' to a record of 25 per cent. increases. There is always a reason for these differences in results. The executive whose mind is firmly fixed on going ahead usually finds some way of accomplishing his purpose.

"Advertising is one way of stimulating sales, but it is not the only way. Some of the other methods are opening new outlets, increasing the sales force, training the old salesmen to produce better results, developing an export trade when things are dull at home, adding new lines of products, finding new uses for the old products, and so on down to the buying outright of some smaller, going business.

"The following is the annual record of sales of a well-known corporation as furnished to its stockholders—what business man can fail to get a stimulus from such a record of achievement?

Year	Sales	Year	Sales
	\$4,592,296	1907	1,014,619
1912	3,414,560	1906	
1911	2,839,328	1905	
1910	2,115,839	1904	324,564
1909	1,389,319	1903	61,777
1908	913,608		

"The one year when this company failed to show decided gains is accounted for by the fact that the fiscal period, for convenience in bookkeeping, was changed from 12 to 10 months. These figures tell a story which any business man will understand. They are eloquent not merely of high efficiency in management, but they tell of indomitable purpose, of imagination, of a refusal to recognize and be a part of business depression. Some of the years here scheduled were actually panic years. But when other concerns were sailing close to the wind this house, as shown by its results,

was busy opening up new ways of getting business.

"The man at the head of a large business needs imagination. He should be thinking and planning at least ten years ahead. He should be able to visualize the conditions that will confront his industry in the future. Mr. Vail, of the American Telephone & Telegraph Co., is a conspicuous example of the qualities we are trying to describe. There are other executives who live only in the immediate present, who fail to recognize what advertising can do to assure the future, and when they attempt to lay hold of it they often find, like Mr. Mellen, of the New York, New Haven & Hartford Railroad, they are too late."

#### Goodyear Takes up Detachable Tread Tire.

Privately shown a year ago, the Goodyear Tire & Rubber Co., of Akron, O., has made



GOODYEAR'S DETACHABLE TREAD

a radical departure by adding a detachabletread tire to its line; it is shown by the accompanying illustration. While the fundamental principle of the tire is not new, the details are worked out in a way that the makers claim to be novel, so that objections that have been made to detachable treads are nullified.

The tread partly encloses the tire and is held in place by the pressure of the inflating air; the beads of the tread are said to be unstretchable, so that once properly itted the tread will stay in place as long as the tire is properly inflated. The tight grip of the beads has the further advantage that it excludes water and dirt. No mechanical fastenings of any kind are necessary, and the combination possesses a maximum of resiliency with a minimum of weight.

Owing to the fact that the tread is not stretched, it is said to be much more difficult to puncture than the ordinary integral tread. The matter of heating is taken care of in an ingenious way. The inside of the tread is not built to hug the carcase snugly all round, but is relieved slightly at each side of the center of the tread, leaving two annular air spaces. As a result of this construction, overheating is said to be prevented.

# GRAPHITE AS A LUBRICANT DISCUSSED BY ENGINEERS

Flake Graphite Veneer Contrasted with Impregnating Effect of Deflocculated Product by Metropolitan Section—The Findings.

It is exceedingly unlikely that there are many persons not intimately connected with engineering matters who can, off-hand, state the difference between flake graphite and deflocculated graphite and the effect of each on the surfaces on which it is used: to the person of average intelligence, graphite is graphite, nothing more and nothing less. But there is an important difference between these two kinds of graphite and in their effect upon metal surfaces, and that difference was made very plain at the last meeting of the Metropolitan Section of the Society of Automobile Engineers, which was held in the Society headquarters in the United States Rubber Building Thursday evening last, December 18th. The meeting was devoted exclusively to discussion upon the broad topic of graphite lubrication.

In the course of the discussion, it was brought out that the most important difference between the characteristics of the two kinds of graphie is that whereas the natural or flake product serves to fill up the minute interstices that give a bearing under the microscope the appearance of saw teeth, and thus provides a sort of thin veneer that materially reduces friction, the deflocculated product goes a little further in that it actually impregnates the metal-it finds its way down into the pores of the metal and thus forms something more than a mere veneer on the surface. Natural or flake graphite on the one hand will not remain in suspension for any great length of time but will precipitate itself, whereas the deflocculated graphite will remain in suspension for indefinite periods. Wherefore, the natural product is recommended only for periodic use, at stated intervals corresponding to the length of time necessary to "wear down" the graphite veneer. Deflocculated graphite, however, is suitable for continuous use, for it will not precipitate.

In drawing attention to the fact that graphite possesses qualities not possessed by either oil or grease, A. Gale Thompson, of the Joseph Dixon Crucible Co., stated that flake graphite "overcomes in a measure the specific cause, the friction, that is, the microscopic roughness, by filling in microscopic depressions and forming a smooth, tough veneer-like surface on the metals. Oils and greases do not do this. The efficiency of oils and greases is much affected by varying conditions of temperature, pres-

sure and velocity. An oil suitable at normal temperatures may become too limpid at higher temperatures and too viscous at lower temperatures to produce good results, likewise, variations of pressure and speed may affect the lubricating qualities of the oils and greases.

"The ideal condition is, of course, that in which the lubricant used has the least viscosity necessary to keep the rubbing surfaces apart or separated, but in attempting to do this there is always danger that the varying conditions may reduce the viscosity to the point where the lubricant cannot support the load, and cutting and heating result. This danger entirely disappears when flake graphite is used in connection with oil and grease, as metallic contact cannot occur when flake graphite is present.

"All graphite is not lubricating graphite, nor is all lubricating graphite fit for automobile lubrication."

Regarding the application of deflocculated graphite, which is prepared in an electrical furnace at a temperature slightly over 7,500 degrees Fahr., by a process invented by Dr. Edward G. Acheson, Marcus A. Smith, lubrication engineer of the International Acheson Graphite Co., Niagara Falls, N. Y., said, in part:

"By adding to the lubricating oil onequarter of one per cent. of deflocculated graphite it is possible to carry to all surfaces a material that is finer than the most minute pores of the metal and which will gradually saturate the metal with a lubricant that heat cannot destroy. Research has shown that it requires 339,000 particles of deflocculated graphite, placed side by side, to extend one lineal inch, and so the statement that the metal becomes saturated is literally true.

"The benefits derived from the use of deflocculated graphite diffused in oil are accumulative, for with continued use all the bearings, cylinder walls and piston rings are protected by a lubricant which impregnates the metal. If at any time the supply of lubricant is shut off, the coefficient of friction remains practically the same for many hours; this fact has been proven by numerous experiments."

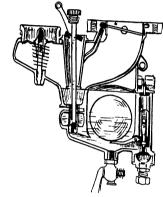
#### King Shares Profits with Employes.

Without previous notice, and, therefore, in the nature of an uncommonly agreeable Christmas surprise, each of the employes of the King Motor Co., of Detroit, on Saturday last was presented with a check equivalent to one-tenth of his salary. It is the King company's way of sharing its profits and prosperity with its workers and, so far as known, the first time that anything of the sort has been done in the automobile industry.

#### JOHNS-MANVILLE TAKES UP **CARTER CARBURETTER SALES**

Device Has One Tube with Many Sprays and Automatically Varies Fuel to Suit Load-Dash-Controlled Starting Valve.

The fact that the H. W. Johns-Manville Co., of 41st street and Madison avenue, New York, has acquired control of the output of the Carter Carburetter Co., of 918 North Market street, St. Louis, Mo., serves to give that device a prestige that it has not heretofore enjoyed and to attract more than usual attention to its individualities. The object of the designers of the carburetter was to combine, in one instrument, the sim-



SECTIONED CARTER CARBURETTER

plicity of the single jet with the good points of the multiple jet, and lose none of the virtues of either in so doing. The internal economy of the carburetter is shown in the accompanying illustration.

The dominant feature of the instrument is the construction of the jet tube. Instead of being an ordinary tube with an opening in its upper end, it is a long tube rising far above the gasolene level and having in its walls, spirally arranged, a series of very minute openings. The suction of the motor -or the pressure of the atmosphere, to be correct-causes the fuel to rise in the tube more or less, according to the degree of pressure. The higher the liquid rises the more holes it can flow through and the more air it will impregnate with vapor. The spiral arrangement of the holes insures direct contact with air.

The float is a good deal out of the ordinary in that it is a hollow metal sphere which controls the inlet valve to the float chamber by pressure on the valve lever. The rising of the float on the gasolene allows the lever to rise and the valve to close, while the falling of the level and, conse-

quently of the float, opens the valve. The carburetter has a special method of providing a rich gas for starting, consisting of the provision of a direct passage from the float chamber to the pipe above the throttle: this passage carries a mixture of much gasolene and a little air to the manifold and is controlled by a special lever which is intended to be connected to a handle at the front of the car where starting is by hand crank, and to the dashboard where there is a starter. The throttle is closed when the easy starting valve is open so as to prevent the ingress of the usual large volume of air.

There are three adjustments on the Carter carburetter-high, low and intermediate speeds. The high speed adjustment is controlled from the dash and consists of an air shutter in the top of the tube enclosing the fuel tube or spray nozzle. The low speed adjustment acts on the spray nozzle itself through a small knurled button on the top; while the intermediate adjustment is through the spring-controlled auxiliary air valve. The carburetters are made in five sizes, from 1 inch to 2 inches, and the prices range from \$20 to \$45.

#### Bay State Drivers Win Winton Money.

First and second prizes in the Winton Motor Carriage Co.'s annual upkeep contest for 1913 were gathered by Massachusetts chauffeurs. John L. Dondero of Boston won \$1,000 for driving a Winton 27,542 miles without repair expenses to his employer, F. M. Hauthaway, and Thomas Murren of Medford won \$500 for driving 18,273 miles without repair expense to his employer, J. M. Anderson. The third prize, \$250, went to William Newsome, who drove 18,258 miles at a repair expense of \$3. In all, 20 prizes, 16 of which were of \$100 each, were awarded.

#### Inspection That's a Stitch in Time.

No one who has a fairly good car expects that it will be necessary to inspect it minutely after every little run around town; but when a more or less strenuous trip has been finished, or when the car has in any way been subjected to unusual strain, quite logically it should be given a little unusual attention to make sure that there have been no bad effects, or, if there have been bad effects, to take the necessary remedial measures.

#### Square File for Heavy Cutting.

It is not often that it is necessary for the owner of a car to do any very heavy filing but it sometimes happens that way, and it is worth knowing that for "ripping off" metal there is nothing more effective than a 16-inch coarse-cut square file—not flat, but perfectly square in cross-section.

#### KEEPING TABS ON TIME IN A LARGE GARAGE

# System That is Simple Though It Looks Complex—Interlocking Time-Cards That Check Each Other—Different Classes of Work Ingeniously Segregated—Colored Cards Facilitate Handling in Shop and Office.

No one man, even with all the experience that it is humanly possible for one man to get, can come within 16-inch gunshot of accumulating all the useful information there is with regard to running a repair-shop or a garage—no, not if he should put in a hundred years at the same business. Different combinations of circumstances.

bottom spaces for the work the material is to be charged to and the foreman's approving signature. Another blank is used as a stockroom receipt for goods taken out, and these are taken to the office every morning together with a form which, when filled in, shows how the time of the men was put in during the previous day. This

This Space is for Time Out or Lost Time

OBVERSE OF CARD THAT "KEEPS TAB" ON THE WORKMAN'S TIME

to say nothing of the different mental makeups of different men, lead to different methods of thinking and, consequently, to different solutions of the same problems, and some of the solutions are bound to be better than others. Of course, the same thing holds true with respect to about everything else that is human, but just now it is the garage and repair shop business that is in question, and that which follows may perhaps help to fill some other niche than that from whence it came.

#### Need Good System and Have It, Too.

A big establishment is the Pittsburgh Motor Service Corporation—of Pittsburgh, Pa., of course—with a five-story fireproof building and 50,000 square feet of floor area and a volume of business to correspond. Obviously there is need for system, and efficient system, too, in such a place. And they have it. Everything that is done is kept track of by means of blanks and forms.

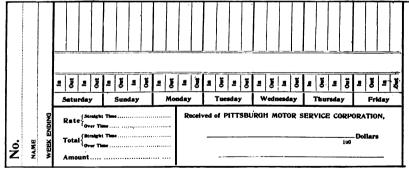
When the stock-room wants material a requisition is made out on a blank which bears a number of its own, the blanks all being numbered consecutively. At the top is a space for the name and address of the firm from which the supplies are to be purchased, in the middle a generous space for the description of the material and at the

is a simple form with spaces for the date, workman's name and number and vertical columns for time ("From —— to ——"), a brief notation as to the work and the job number.

owner's telephone number, make of car, license number and work to be done; and at the bottom spaces for "Date in" and "Date out." The lower half of the tag is torn off and taken to the office as soon as it is filled in—which is the same as saying as soon as the car is brought in—and the upper half remains on the car, of course. On the part that stays with the machine, on the reverse side, is a form headed "If Cash Job" and arranged for the notation of time and material used in doing the work. The use of this part of the tag is obvious.

#### Effective Checks on Men's Time.

The time card from which the payroll is made up, which is separate from the daily time sheet, is a model of convenience and clearness, providing, as it does, for every condition that would seem likely to arise in the ordinary course of the work. It is a long, narrow card about  $2\frac{1}{2} \times 8\frac{1}{4}$  inches, of good tough stock, and provides for an entire week. A vertical column divided into sections for each of the seven days, and marked with the days of the week, has the usual "In and out" time spaces which are so easily filled in that it hardly can be imagined that a man could make a mis-



REVERSE SIDE OF CARD WHICH SERVES AS AN ADDITIONAL CHECK

Indicating how the forms work together and how one gives part of the information necessary to fill in another, the workman gets the job number which goes on his daily time sheet from a long tag which is tied to every car that comes in. The tag is scored across the middle so that the lower half can be torn off; on one side the upper and lower halves are alike, bearing a number and spaces for name, address,

take. This leaves space for the man's name and number at the top and the date of the ending of the week; also a space for figuring the total straight time and overtime and for the employe's signature as a receipt when he is paid. On the reverse, printed in red ink, there are two spaces, one for time out or lost time and the other for overtime. This provides a check on the time all round and makes it comparatively

easy to trace an error should one occur in figuring time in any of the divisions.

Provision is made for keeping track of the volume of motor truck business as distinguished from all other classes of work by having a special extra card that must be filled out by the men working on trucks; this is in addition to the regular time-card. The blank is like the time-card in that it is divided into sections to provide for a week's work; but there is nothing on it but these divisions, with the spaces for time in and out and "Extra" printed in big red letters. Also, while the regular time-card is white the extra truck card is in buff.

### Check That Is Receipt for Owner.

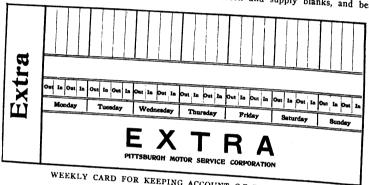
The garage card is like the repair-shop card in that it is a long tag to be torn in the middle and the lower half sent to the office. It differs, however, in that it has a check at the bottom to be torn off and given

battery, price and date paid-or charged, as the case may be.

Supplies that are given out to customers are looked after with the aid of a special form made in triplicate on yellow paper and providing spaces for noting gasolene, various grades of oil, grease, waste, kerosene and miscellaneous stuff; also for washing, polishing and storage time. One copy goes to the office, one to the customer and the third to the stock room whence the supplies came.

### System Also Fits Tire and Tube Work.

The distinctively colored check system is followed out in charging up tire and tube work, the tag, which is of the same size and shape as the white battery charging tag, being a bright blue and having the three divisions for the car, the office and the receipt check. It is numbered, as are all the other work and supply blanks, and bears



WEEKLY CARD FOR KEEPING ACCOUNT OF EXTRA WORK

to the owner as a receipt. All three sections are given the same number. The two main portions bear spaces for name of owner, make and number of car, date in and date out, and for indicating the time devoted to storage, washing and polishing and other labor, and the amounts of oil, grease and gasolene supplied. On the back of the owner's receipt check is a notation to the effect that the check must be presented when calling for a car, unless the person demanding the machine can be identified at the garage. The garage card is a bright yellow, while the repair-shop card is white.

### Garage Charges Electric Cars, Too.

The same system is adopted in keeping track of electric vehicles that come to be charged—yes, the Pittsburgh place takes care of electrics, too-and a tag is used that is about the size of an ordinary baggage tag and is divided into three sections—the original, which stays with the car; the duplicate, which goes to the office, and the owner's receipt check at the bottom. The tags, which are white, are consecutively numbered, of course, and have spaces for date, name, date promised, condition of

the date, name, time promised, work to be done, price, and date paid or charged.

Finally, there is the billhead, to which everything else leads up. This is a little out of the ordinary in that it has down the left side a series of columns for noting quantities of gasolene and oil and hours of labor on every day of the month, there being a line for each day and one for totaling up. This is a sort of check on the body of the bill, in which there is space for storage, gasolene, oil and labor items and the usual extensions, and below plenty of room for remarks of various kinds.

### Elwood Haynes's "Complete Motorist."

Elwood Haynes, president of the Haynes Automobile Co., of Kokomo, Ind., just has published a booklet under the title "The . Complete Motorist" that does not look like an automobile catalog, and, for that matter, is not a catalog-at least, not wholly. While it has all the makings of an unusually comprehensive catalog, it contains a good deal more than that. Notably, there is a story of the life of Elwood Haynes, by himself, that is exceedingly interesting, showing, as it does, how this pioneer thought and

worked and accomplished things in the early days that seem so much further back than they really are because of the rapid progress the automobile has made. In addition to minute data on Havnes cars, there is a mass of information that is useful to anyone who has anything to do with a car, no matter what make. The booklet is gotten up in the best style of the printer's art from one embossed cover to the other; it measures 91/4 x 6 inches and contains 78 pages and no end of illustrations. According to the title-page, it is "Privately printed and issued to the followers of America's cleanest sport."

### Where Dry Cells Must Not Be Used.

As superfluous as the advice must seem to those who are familiar with the characteristics of storage batteries, it still is necessary to point out to those less familiar with them that dry cells never should be connected with accumulators; the effect of the arrangement might be expected at first to light the lamps to unusual brilliancy. Very quickly, however, the dry cells will become exhausted and they then will act as a powerful resistance to the passage of current from the storage battery to the lamps. with the result that what little life here may have remained in the storage battery very rapidly will be exhaused. Similarly, it is quite as foolish to attempt to operate even one lamp on dry cells for any length of time. Dry cells are intended solely for light intermittent work; they never were intended to be used for continuous service, and when they are so used they very quickly become exhausted and forever worth-

### Freeing Pistons That Have Seized.

There is much to be said in favor of the practice of filling the radiator and engine jackets with hot water in the event of piston seizure as the result of cold, or to facilitate starting in cold weather, though there is a logical procedure in the method which seldom is followed. If the hot water is poured directly into the radiator, most of its heat is lost before it reaches the engine jackets where it is to get in its fine work. Hence, a funnel and a tube reaching into the sloping pipe which feeds into the top of the radiator should be used and the usual direction of water circulation reversed pro tempore, in order to give the heat to the engine instead of losing it in the radiator.

# When Handles Help Good Work.

While it is by no means an uncommon thing to see a file used without a handle, it is a most unsatisfactory way of working; not only is it impossible to do decent work without a handle, but there is considerable risk of getting a nasty wound.

### MOTOR WORLD

# HOW GROUNDWORK EFFECTS THE DURABILITY OF PAINT

Necessity of Exercising Particular
Care in Applying Undercoats Emphasized by Expert—Primary
Foundation Outlined.

To obtain beautiful paint work requires care, but most of all it requires care in preparing the under-coats for the reception of the color and varnish. That a thorough scouring and rubbing down and sandpapering of the earlier coats, beginning with the priming coat, or even with the wood or metal itself, is the basic principle of good automobile painting is the opinion of an expert on the subject, and in his rules for converting a roughly finished car into a thing of beauty he lays particular stress upon this point.

The under-coats may be made to appear as the fine dust of the balance, he says, but it is noticeable that wherever there is failure to get the surface down close and right at the very beginning there is proportionately greater failure in getting a rich and satisfying job of painting and finishing.

Primarily, then, it is necessary to get at the wood before it is primed, and wear the bristles and the coarse fiber down until no wisp of coarseness remains. Then lay on the primer, brushing it out with a free hand until the coat lays smooth and fast upon the surface with some part of it gripped into the pores and clinched. If this primer is made up, as it should be, of pure raw linseed oil stained with a bit of lead and ochre. it will do well. Give the primer plenty of time to dry. The primer is the key to the situation. In due time give it whatever sandpapering it may need to condition it for the following coat. Never putty on the priming for good work.

The second surfacing coat for body or running parts should have all the oil it can safely carry. In the case of close textured wood, oil and turpentine in equal parts, or possibly three parts oil to five parts turpentine, will do, while for coarse grained wood five parts oil and three parts turpentine may be used and time allowances fully met.

In due time rub this foundation out carefully and proceed with the color and with the varnish coats. This, in brief, is the outline of what a good primary foundation should be like.

### Pneumatic Cushions in This Wheel.

Regardless of the skepticism with which their efforts are regarded, inventors of resilient wheels pursue the even tenor of their way, consoling themselves with the reflection that not so many years ago the flying machine people were accorded exactly the same sort of treatment. Resilient wheel inventions increase in number almost daily, and though it cannot be said that the one



COATES RESILIENT WHEEL

shown in the accompanying illustration—the Coates resilient wheel, made by the American Motor Wheel Co., of Crawfordsville, Ind.—is one of the latest, because doubtless the latest one was born today, it certainly is unusual even in its own class.

The construction is fairly clear from the illustration. The six rubber-and-fabric air cushions are enclosed in steel rings that are attached to the main wheel rim, and to their centers are attached the outer ends of six double spokes radiating from the hub, which is free to move as much as the elasticity of the cushions will permit. Tubing places all the cushions in communication; the air pressure can be varied from 30 to 100 pounds to suit the load. In service the whole wheel is enclosed between two steel plates that exclude dust and dirt. One or two cushions can be removed without put-

# CALIFORNIA CLUB ADVISES DEALERS ON LEGAL POINTS

Motorists' Organization Explains
Questions That May Puzzle Dealer—Repair Liens and Sale
of Defective Car.

While it is generally supposed that the principal object of an automobile club is to benefit the car owner, the dealer and garageman may be said to come within this classification, but the Automobile Club of Southern California has taken a somewhat unusual step in extending gratuitious advice on legal questions to the garagemen and dealers of the Bear State.

This advice covers various phases of business, and, while the laws of all States may not be alike on the points involved, the discussion at least will afford the dealer or garageman of any State the basis for pertinent inquiries.

The club first takes up the matter of repairs, and says:

"In making repairs upon an automobile it is incumbent upon the repair man to do the work in accordance with the contract by which it is undertaken. If the contract is not written certain implied obligations exist to wit, to make the repairs in a workmanlike manner, using such skill and judgment as the undertaking requires. If these requisites are performed, the workman is entitled to a reasonable value for his services and the cost of the materials used. Should the owner of the machine refuse payment, the workman has a lien upon the automobile or other articles in his possession until the claim is in some manner discharged.

"Possession of the repair man, in order to support the lien must be continuous, and uninterrupted by any redelivery to the owner. If such redelivery occurs, the only security is the owner's personal liability upon the contract. If such possession is once broken, the repair man cannot repossess himself of the property by force, but must resort to law.

"A question of frequent occurrence among motorists is the determination of

failing this, a return of the purchase price, if that has been paid, or, if not, withhold payment.

"Sometimes, however, this cannot be done, or it is impossible to return the article; in this case, the only remedy is to bring an action to recover the damage, which is the difference in the value of the article actually supplied and that which it is represented to be.

"The storage of motor vehicles in a garage is a form of bailment, the garage keeper being the bailee, and the owner the bailor, and rests upon a contract, express or implied.

"The garage keeper is not absolutely liable for any damage to the automobile while in his possession, but is only liable for damages resulting from failure to exercise ordinary care and prudence, according to the circumstances of the case. This liability extends not only to the motor vehicle itself, but also to the goods or articles of the owner left in connection with the machine. But it seems that, in case of such articles, the attention of the garage keeper must be especially called to them when the car is stored.

"The garage keeper holds the property for no other purpose than to care for it during the continuance of the bailment in accordance with the contract and redeliver it to the owner upon the termination of that contract. Should he make a delivery to the wrong person through mistake or negligence, he will be held liable as much as if he had turned the property to his own use. He is held to know who his bailor is and can have no legal reason for making a wrong delivery.

"It is often stated that a garage proprietor is required to exert in his calling the diligence which good business men in his business are accustomed to exert. This obligation involves among other things a duty to take reasonable care that any building used for the purpose is in a proper state, so that the thing deposited may be reasonably safe in it.

"Some false notions have arisen among motorists as to the rights of pedestrians on the highways and streets. For instance, pedestrians are not obliged to cross a street at a corner or other specially prepared cross-way. They have a right to travel anywhere upon a highway and are not confined in their rights to one particu-

"Even the failure of persons on foot to look and listen for approaching vehicles is not conclusive evidence of negligence on his part, if he is run over. True, pedestrians as well as others are bound to exercise due care under circumstances, but no additional burden is placed on them because they are foot passengers."

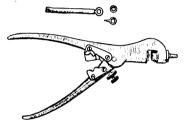
# PERMANENT TERMINALS MADE

# BY EISEMANN SPECIAL TOOL

Anyone Can Make a Neat Brass Ring on the End of a Cable-Carries the Current and Will Not Release the Wire.

What is a decidedly ingenious and obviously effective method of simultaneously forming and attaching terminals to ignition and other light electrical conductors has been evolved by the Eisemann Magneto Co., of 32 33rd street, Brooklyn, N. Y., and is shown in the accompanying illustration, which shows the unfinished parts, the finished terminal in place and the tool used to do the work.

The raw material, so to speak, of which the terminal is formed, is a pair of brass



EISEMANN TERMINAL TOOL

stampings, one of which is a flanged ring and the other a ring with a channel and an integral pin. In making up a terminal, the cable is first stripped of its insulation by cutting it with the tool, and the pin is inserted in the insulation as far as it will go. The bare wire is coiled around the ring and laid in the groove, the flanged ring inserted, covering the coiled cable, and the tool is again brought into play to turn over and clinch the flange, locking the whole firmly together and making a substantial terminal that is as good mechanically as it is electrically. The pin projecting under the insulation stiffens the cable at a point where it would otherwise be liable to bend and break, while the turning over of the flange locks the terminal hard and tight and absolutely prevents the loosening of the wire.

Another product of the Eisemann company that just has been placed on the market is a more than usually substantial kick switch. It is a simple switch in appearance and in construction, with little or no chance for derangement, and is a thing that one does not hesitate to really kick, for it will stand it. The broad lever is removable when in the off position for the purpose of locking the ignition, and the opening is so arranged that it is not possible to make a connection by the time-honored expedient

of sticking in a nail or other bit of metal. Contact is not made by the lever itself, but by an internal part which the lever moves, and even should some evil-minded persons succeed in figuring out the modus operandi of the device, it would be an extremely difficult job to work the switch in the absence of the lever. The switch is designed to set into the dashboard showing only the face and lever. It is finished in nickel.

Massachusetts's Motor Population, 62,660.

According to the report of the State Highway Commission for the fiscal year which ended November 30th last, there were in Massachusetts on that date 62,660 automobiles, of which 9,848 were commercials and 920 non-resident cars. There also were 7,127 motorcycles. The total income from the registration of these vehicles was \$629,641. In addition, 1,330 certificates were issued to manufacturers and dealers, which increased the income to \$662,193.50. Licenses of 40,858 operators were renewed at 50 cents each and 17,009 new operators' licenses issued at \$2 each; 23,167 professional chauffeurs also were licensed, of which number 17,938 represented renewals, the fees for them being the same as for private operators; 7,288 examinations at \$2 each also figure in the income for the year, the total of which was \$764,153.51.

New York State Has 132,000 Motor Cars.

Statistics of New York's Secretary of State reveal the fact that there are approximately 132,000 automobiles within the confines of the Empire State, of which 29,000 are in New York county, which consists of the Borough of Manhattan, one of Greater New York's five municipal divisions; in 1901 the registration was 954. The State registration bureau has thus far this year registered exactly 132,220 cars, and 56,185 chauf-

Taxicab Men Adopt Cash Fare Plan.

The Bradley Transfer & Livery Co., which operates a taxicab service in Waterloo, Ia., will abolish all accounts with customers after January 1; officers of the company state that with the minimum charge of 25 cents for the first mile, as fixed by the city ordinances, the margin of profit is small and that many losses have resulted from inability to collect accounts.

Gets More Room to Make Fire Apparatus.

The South Bend (Ind.) Motor Works has acquired and taken possession of what was formerly the plant of the Singer Mfg. Co. in that city. The Motor Works has been building large truck and fire apparatus in a small way but in the factory just secured its production will be considerably

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### er insee INVENTORY A COMPASS THAT **GUIDES THE BUSINESS SHIP**

Without It the Course of Progress is Never Known and is Uncertain-Credit Men Advise of Pitfalls of Loose Methods.

"Inventory? No time to bother with an inventory! Neither can I afford it."

This is the attitude often assumed by the small dealer or garageman and it is needless to state that he is firmly convinced in his own mind that he is acting for the best interests of himself and his business; but that he is acting not in the best way but in the worst way is the contention of no less worthy an organization than the National Association of Credit Men.

To further the development of better business, this organization has issued in a bulletin a copious quantity of advice to the business man on the question of inventory, strongly recommending this practice.

"No business man would care to start on a voyage to a distant port," the bulletin says, "with a captain who sailed his ship r. . without a compass, even if that captain the were an experienced mariner and had an acute instinct for distance, directions, currents, and winds. Even these qualities or would not give a man confidence in such a captain's ability to reach his destination without a compass to guide him.

"Now, the need of a compass in the equipment of a ship is no greater than the need of a compass in business, which is the taking of a careful inventory at regular periods. The inventory is the compass of a business because the information it gives enables the merchant to steer his course toward success, the destination he is seeking.

"We occasionally find a merchant who has apparently done well, sailing his craft pu upon dead reckoning alone, but for every success among such merchants there have been failures upon failures.

"To many merchants the taking of an inventory seems a big job. They neglect it, excusing themselves day after day with the argument that they cannot spare the time, or do not want to employ extra help which the taking of an inventory requires. They forget that the inventory is the first essential in ascertaining whether the business is heading toward success or failure, and this is true whether the business be large or

"It is inexcusable on any grounds for a merchant or manufacturer to wait until what he has is less than what he owes, to discover that bad management or miscalculation has brought him face to face with failure. Through the inventory it will be revealed to him whether the gross profits of his business are larger than cost and operating expenses combined, or whether his investment is suffering a shrinkage and the business is headed toward failure.

"The inventory is a record of stock on hand at its real value. Self-deception is practiced if any merchandise is inventoried at more than the price at which it could be replaced. Generally speaking, the proper basis for taking an inventory is the buying cost, but should the value of the merchandise, when the inventory is taken, be less than the cost, the actual value and not the cost should be the inventory figure. If goods are shopworn, out of style or for other reasons not readily salable, their real worth, and not their cost, should be used in making the inventory. On the other hand, if the goods cannot be replaced at their cost, that is, if they have advanced in value, it is then safe to have this difference shown in the profit on sales, but not in the inventory.

"The last inventory is the first thing that the fire insurance adjuster calls for when he comes to adjust a loss. Without it, any business men would have difficulty in making up a proof of claim satisfactory to the insurance company.

"In fact, the inventory may be described as the cornerstone of the bookkeeping end of a business, and just as a business man cannot know in what direction his business is heading without the inventory, so he cannot know without a faithful keeping of accounts. We cannot here sketch a bookkeeping system, but it is not difficult for any merchant to get a knowledge of simple books of accounts, or at least to have some one keep such books for him.

"There should be a record of cash received and paid out; a record of goods bought and paid for; a record of accounts receivable for merchandise sold on credit. Such records, accurately kept, will, in connection with an inventory each sixth or twelfth month, enable the business man to discover whether his business is profitable. To illustrate: A merchant starts with a capital of \$5,000. At the end of the first year he takes stock and finds that the true inventory totals \$5,642.37. He may then proceed as follows:

Stock on hand, as inventoried. \$5.642.37 Accounts receivable 1,436.40 Cash on hand 467.80
Total assets
Total liabilities\$2,080.90

Capital in business ......\$5,465.67 "Upon this very simple bookkeeping plan the merchant discovers that in one year his business apparently shows an improvement of \$465.67. This is small considering the fact that no interest has been charged on the initial capital. It should indicate to the merchant that some attention should be given to the profit side of his business. How could he learn this, save by inventorying? It is the inventory which provides him his business compass.

'The time must pass when even the smallest merchant will take the chance of sailing his business craft upon dead reckoning alone, and manufacturing and wholesale houses will be unwilling to risk their merchandise in such a venture.

"The business man should set his inventory dates and not let them pass without taking inventory. He should remember that the inventory is more important and necessary in safeguarding against failure than all of the shrewdness and business instinct he possesses."

#### 'Dead" Garage Proves "Live" Litigant.

Although the Williamson Garage Co., of New Brunswick, N. J., whose realty was taken over by the Middlesex Garage Co. in October, 1912, has not been active in business since that date, it is more or less active in litigation; a suit has been filed in the Chancery Court in Trenton by the Williamson Garage Co. against Walter Williamson demanding that certain payments made by George Berdine, another stockholder, be credited, which he claims was not

Williamson resigned from the company three months before the property was sold to the Middlesex company and Williamson is credited with the statement that he will file a cross suit against Berdine, demanding that the latter render to the stockholders an accounting, something Williamson claims has thus far been unobtainable.

### Lends His Garage to Church People.

Several times within the past year churches have been transformed into garages, but the opposite is a rare occurrence; such a case exists, however, in Hillsboro, Ill., where the Hillsboro Garage, of which J. C. Kendall is proprietor and manager, has been used this month for union revival services: sufficient space for the routine of garage work was reserved and the services did not interfere with business.

### Two Less on Local Show List.

Brooklyn, N. Y., and Indianapolis, Ind., have eliminated themselves from the local show list. Because of the fact, the Automobile Chamber of Commerce will designate as "Brooklyn night" one night of the forthcoming New York show, while in Indianapolis the dealers will probably hold "open house" for one week.

# DEVELOPMENTS in ACCESSOR Steam Vulcanizer that's Really Portable.

The advantages resulting from the use of steam in vulcanizing are well known and are taken advantage of in all large vulcanizers. It is not so easy, however, to make a steam vulcanizer that is small enough and light enough to go in the tool-box-in short, a car vulcanizer. Yet this is what the National Motor Supply Co., of 5606 Euclid avenue, Cleveland, O., has done in its "Wizard" automatic steam vulcanizer.

The accompanying picture clears away all doubt as to the small size of the device, which has a shipping weight of 5 pounds. The heating plan is the exceedingly simple one of pouring gasolene—a little measuring cup prevents any error as to the quantity by ensuring just the right amount-into the receptacle and setting fire to it.

The fuel furnishes the requisite heat for the proper time, while the water in the vulcanizer acts as a heat regulator and prevents burning the job. Incidentally, the water is put into the water space at the factory and the makers state that it never needs replenishing. Once the gasolene is lighted there is nothing to do but let it burn; at the end of 15 minutes the job is

The "Wizard" vulcanizer is 3 x 6 inches on the vulcanizing surface and will vulcanize both tubes and casings, the latter being done on the wheel if desired, though not necessarily. The outfit, packed in a wood box with slide cover, includes everything required for ordinary work, including raw rubber, cement and shears, and the

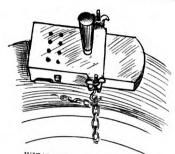
### Blow Torch That Burns Kerosene.

Anyone who has attempted to melt brass -to say nothing of copper-with only an ordinary blow torch as a heater will appreciate what it means to say that a torch is capable of generating sufficient heat to melt a one-inch brass rod in two minutes or a piece of ½ x ¼ copper in three minutes. This is what the makers of the Hauck kerosene torch, the Hauck Mfg. Co., of 140 Livingston street, Brooklyn, claim their device will do, and this, of course, makes it available for a far wider range of service than the average gasolene torch.

The Hauck torch, which is shown in the accompanying illustration, is made in capacities of from half a gallon to 1 gallon in its standard forms; larger sizes also are made. The flame is 14 inches long and will heat a 2-inch steel shaft a bright red in five min-

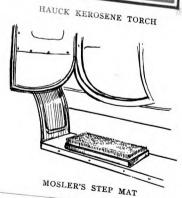


utes. The torch is well adapted for use in connection with annealing and tempering, for which purpose a special furnace is fur-



WIZARD STEAM VULCANIZER





nished having an opening through which the nozzle shoots the flame into the heating chamber. Another of the company's products is a compound especially designed for the brazing of steel and cast iron.

### Mosler Develops Mat for Running-Boat

To prove that its energies are not who absorbed by the work of devising and ma ing spark plugs-and for other reasons-R. Mosler & Co., of Mt. Vernon, N. V has devised a little convenience the ought to be appreciated in these days cars with clean interiors—when they or be kept clean. The device is just a little mat to go on the step, where the foot me urally rests when getting in and out of the machine. The mat is suitably mounted for placing on the running-board, and once pu in position will not shake out of place. No only does it afford a means of removing mud from the feet before entering the car but it prevents slipping as well. While the mat was designed primarily for use with limousines, there is no reason why it can not be used on touring cars to their advan-

### Contacts that Should Be Cleaned.

The little flash that appears occasional in the automatic circuit breakers of electric lighting and engine starting systems need cause no worry. It is due to the opening of the contacts and signifies merely that some slight quantity of foreign matter may have accumulated on the contacts-possibly a few grains of carbon dust or a minute quantity of oil. To remove the trouble it is merely necessary to clean the contacts. using for the purpose two strips of very fine emery cloth glued to opposite sides of a piece of fairly stiff Bristol board.

# Jewelers Favor "Pure Platinum" Law.

Platinum will be platinum and nothing else if the National Jewelers' Board of Trade succeeds in having made into law in New York State a measure it has drafted and will have introduced into the legislature; it outlines a fine of \$500 or a year's imprisonment for labeling as platinum a product which is not 950/1000ths pure. The bill, if enacted, will affect several phases of the automobile industry, especially the manufacture of spark plugs.

# How to Put a Handle on a File.

The proper way to put a file into a handle is to bore a hole with two drills, one quite small and extending almost as deep as the tang of the file is intended to go and the other larger and going only a short way into the wood. When the file is driven inand it should not require too much forceit will make for itself a good socket.

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#### FURNITURE THAT PROMOTES EFFICIENCY **SHOP**

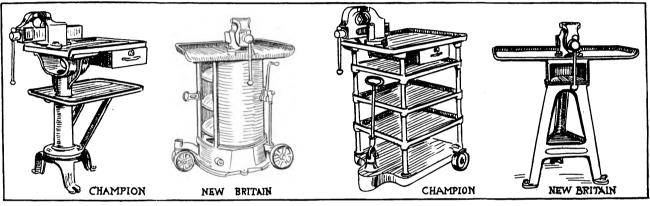
### Metal Tool Racks and Benches That Can Be Pushed About the Garage To Keep Tools Always Under the Workman's Hand—Vise Stands That Fill a Genuine Demand—Repairshop Equipment Up To Date.

A place for everything and everything in conce its place.

There is a wealth of suggestion and real s-wie help in the sentence. At least, Billy Rea, ce is humanitarian and utilitarian garage propriehere the tor, found it so. Rea believed in lightening in aid; the labors of those who worked for him ally az because he found that in doing so he directard at ly advanced his own best interests. He out oig figured that if a workman could put his

apart preparatory to being overhauled, the stand was pushed up alongside and into its capacious compartments went the various nuts and bolts and small parts; in one of the lower trays the workmen laid their tools -and automatically felt for them when it became necessary to use them. The important part of the whole arrangement was that no workman had to leave his job to get a tool he needed, for it was right there bemanufacturer who turned out hundreds just like it every day.

Take the two-tray tool rack produced by the New Britain Machine Co., of New Britain, Conn., for instance; its very appearance suggests at once its usefulness in any garage or repair shop; yet it is one of the simplest pieces of shop equipment that is put out by any maker. Manifestly, it is a little more complete than a similar stand



FOUR TYPES OF PORTABLE AND STATIONARY VISE STANDS SUITABLE FOR GARAGE USE

hands on a tool or a part or a nut or a bolt when he wanted it and didn't have to go hunting the shop over for it, time was saved -- and time always has been money to any garage proprietor.

He knew, too, that workmen are kept contented and boosting for the business by the proper kind of shop equipment; no workman is particularly enamoured of a soap-box substitute for a proper tool holder; fishing for nuts and bolts at the bottom of a box full of the heterogeneous parts that come out of a car in the course of an overhaul takes time, and time is-well, it's been said before. All these things Rea realized and so he invested a few dollars in a small iron stand, divided into several compartments and mounted on wheels so that it could be easily pushed about the shop from place to place.

The presence of the new piece of equipment automatically speeded up the work of his staff. The workmen used the stand automatically; they didn't have to be told to use it. Rea uncrated it, pushed it out onto the floor and said: "Go to it, fellows!" They went. When a car was being taken side him-right at his fingers' ends, so to speak.

lt was not very long before Rea came to know that the stand was a good investment; that after having paid for itself in a comparatively short space of time, it was paying him dividends, for the simple reason that it eliminated the time lost by workmen in leaving their jobs to search through the litter on the work bench for a wrench or a screwdriver or a file or some other small tools that are eternally "lost."

### Saving Time by Helping the Workman.

The stand that Rea purchased was one of quite a number that are made by several specialists in just such equipment. It was a simple device-so simple, in fact, that one of his own workmen might easily have made it in spare time; and Rea would have had one of them do so, if the price of the stand had not been so reasonable in view of its substantial construction as to make any action of the kind seem more or less foolish: for without the facilities for making it, no workman could turn it out at anything like the price asked for it by the

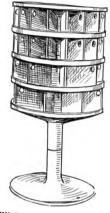
without the drawer, and it costs a little bit more. But the drawer gives the workman a safe place for his small private tools; and what workman is there who has not a pet wrench or a pet screwdriver or some other small tools that he has made himself for special work? The castors permit the stand to be pushed about the shop from place to place and the trays are plenty large enough to hold all the tools ordinarily used for the general run of overhaul work.

The stand is made in two sizes, one having trays measuring 20 x 26 inches and the other having trays measuring 24 x 32 inches; the height of both is 32 inches, though this figure can be varied to suit individual requirements. The weight of the smaller rack is 200 pounds and of the larger 330 pounds. In another style, the drawer is missing and there are three trays instead of two, the other dimensions remaining the same. Obviously, trays of the kind are particularly valuable in repair shops where a lot of turret lathe work is done and tools are needed constantly at the hand of the

Incidentally, it is pretty well known that

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every lathe will in time accumulate a pile of turnings under it, the size of the pile varying with the amount of work turned out. Also, such turnings must be cleared away from time to time, and the easier the job is made the greater will be the time

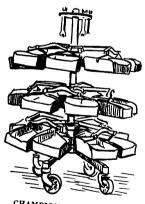


NEW BRITAIN SCREW RACK

saved. To fit into the particular niche suggested in logical sequence, the New Britain company produces lathe pans in a variety of styles and sizes, of which one is illustrated herewith.

### Pans That Hold Turnings and Tools.

In this particular type, the upper tray is made comparatively deep, so that it will hold a fairly large accumulation of turnings before it becomes necessary to transfer them to some other receptacle. The lower tray is shallow, with scarcely any rim at all, and is intended to hold such tools as ordinarily are needed at longer intervals than those that would be placed on a portable



CHAMPION SCREW RACK

stand at the elbow of the worker. In another type, there is only the top tray, the device then being nothing more than a lathe pan. To fit the various sizes of lathes, the pans are made in both double and single styles in lengths and widths varying from

30 x 16 inches to 66 x 20 inches; the height usually is one inch less than the height of the lathe bed from the floor, and varies from 23 to 26 inches.

### Revolving Racks That Expedite Work.

Another device produced by the New Britain company that should find a ready use on almost any repair shop where the doctrine of system is preached, is the revolving screw rack illustrated herewith. The stand is expansible—or elastic like an elastic bookcase; the individual compartments can be made any size, the partitions being readily adjustable, and almost any number of shelves can be added to keep pace with the growth of the business. The illustration simply shows a popular size. It stands 50 inches in height, though it may be varied in multiples of 61/4 inches, is 27 inches in diameter and weighs 650 pounds. There are 48 compartments in the stand illustrated and every one of them is instantly accessible from any side because the whole top revolves on ball bearings.

The Western Tool & Mfg. Co., of Springfield, O., also makes a nut and bolt stand of somewhat similar kind, the most important differences being made plain by the ac-



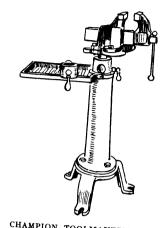
NEW BRITAIN LATHE PAN

companying illustration. In the Champion stand, as it is styled by its makers, the whole business revolves on the castors upon which it is mounted. Another important difference is that the individual compartments are readily removable; they can be carried about the shop to any particular job, or back to the stock room to be refilled. "Tote" pans, they are styled, because the workman can "tote" them around with him. At the top of the central pedestal there is a small tool rack to hold light hand tools most in use; it is mounted so that the tools can be rotated into the fingers of the workman. The stand illustrated holds 32 "tote" pans made of sheet steel, though despite this fact it is comparatively small and takes up little space.

### Why Vise Supports Must Be Rigid.

In the estimation of no inconsiderable number of skilled workers, there are few abominations greater than a vise support that is not absolutely rigid; a vise mounted on a bench that has even a little bit of spring practically takes all the "gumption" out of the workman, whether he notices the spring or not, and it follows quite as a

matter of course that for real efficiency a vise, above all things, must be solidly and substantially mounted on some sort of a support that will permit the heaviest filing and chipping without "give," either appreciable or unappreciable.

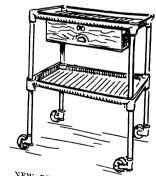


CHAMPION TOOLMAKER'S VISE

In this respect, the metal support is the support par excellence, for it is difficult with even the most substantial wooden bench to obtain the degree of rigidity that is so essential to good vise work. For this reason both the New Britain company and the Western Tool people have turned their attention to the production of solid metal vise stands that for practical utility are, figuratively speaking, miles ahead of any wooden mounted arrangement. Both companies make several styles, of course.

### Rigidity Obtainable With Metal Stands.

The three-legged New Britain stand illustrated herewith, for instance, is a happy combination; it may be had either with the tray (or bench top) or without it.



NEW BRITAIN TOOL STAND

though manifestly the top forms a handy lodging place for files and for material finished or to be finished. Also, beneath the vise there is quite a large space for small tools. The base itself is a rigid casting. which, by reason of its three legs, will stand t be 🍇

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firmly on any floor, regardless of whether it is level or not. And because there are no joints to work loose, the stand will retain its rigidity indefinitely.

Mounted on the stand there is a five-inch vise, the exact style being optional with the purchaser, and the supports are heavy enough to "stand up to" filing and chipping work up to the limit of capacity of the vise. The weight of the whole outfit complete, with the bench top, is 375 pounds, the size of the table being 20 x 40 inches.

#### Stand Adjustable in Any Position.

The Champion toolmaker's vise stand, which is produced by the Western Tool & Mfg. Co., is radically different from the New Britain, as the accompanying picture makes plain; also, it is slightly smaller, though its size scarcely is an indication of its adaptability. It will accommodate vises up to the 41/2-inch size. The most important part of the outfit, barring the rigidity of its support and its substantial character, is that the vise is so mounted that it can be turned or tipped to almost any angle and also can be raised and lowered. Similarly, the small table that forms part of the outfit also can be turned so that whatever it contains can be placed wherever it is most needed. The height to the top of the post is 33 inches; the weight of the complete outfit is 220 pounds and the adjustable shelf measures 14 x 16 inches.

In another style of Champion stand, which, like the one just described, is destined to remain always in one place, no means for moving it about being provided, the equipment is more complete. There are two shelves instead of one, though both are stationary, as is the vise, and beneath the upper shelf there is a good-sized drawer for the reception of machinist's private tools. The height of this style bench is 36 inches, the weight is 200 pounds, and both tables measure 17 x 21 inches. The same style also is made in a larger size weighing 300 pounds and having tables measuring 21 x 25 inches.

### Portable Benches That Save Time.

On the theory that it often is more advantageous to take the bench and the tools to the work than it is to take the work to the bench, the Western company also produces a number of styles of portable benches, one of which is illustrated herewith as being particularly suitable for use in the average garage or repair shop. In this case there are four shelves, not counting the base, which, however, will serve as a shelf, and the whole outfit is mounted on three heavy wheels, thus permitting it to be drawn about the shop. When the handle is in the position shown, the front wheel is thrown out of operation and at the same time a brake is put on the rear wheels, causing the stand to remain rigid, regardless of the work that may be done on it. When the handle is pulled forward, the brake on the rear wheels is released and the front wheel comes into operation. The height of the stand is 40 inches and the top shelf measures 22 x 30 inches, the distance between shelves being seven inches. The weight of the outfit is 300 pounds. The vise is not included in the list price.

The New Britain portable vise stand is quite different from the Champion, for, instead of being rectangular, it is round and the shelves are completely enclosed; where specified the sliding door is made to lock. As the picture shows, the stand is mounted on three wheels, or rather on four wheels, which give the effect of three-point support and therefore permit the stand to remain firm regardless of minor inequalities in the floor surface. At the back there is a lever which raises the stand off its base, so that it can be transported upon its wheels.

#### Circular Stand With Unusual Features.

One of the distinctive features of the outfit is that the inner shelves are adjustable and that when the door is closed it sets into a grooved jamb, making it virtually impossible to open it, once it is locked, without wrecking the whole cabinet. There is ample space inside for the storage of small tools, and the top shelf is flanged to prevent work being pushed off onto the floor; the front edge, however, is turned down, providing ready access.

The stand is made in two sizes, to accommodate vises of 3½- and 5-inch capacity, respectively, the smaller weighing complete 330 pounds, and the larger 575 pounds. In the smaller cabinet, the height of the tray is 34 inches and its outside dimensions are 20 x 26 inches. The height of the larger cabinet is 31 inches and the tray measures 24 x 32 inches.

### Putting Gasolene Barrels to the Test.

The first official test ever made of the strength and design of wooden barrels for gasolene and naphtha were those carried on for three days last week by the Forest Products Laboratory at Madison, Wis., under the direction of the Bureau for the Safe Transportation of Explosives and Other Dangerous Articles, American Railway Association, New York. It is believed that these tests are a forerunner of comparative tests of the strength and design of wooden and steel barrels. Wooden barrel manufacturers fear that the steel or iron barrel will supersede their products for the transportation of gasolene and other volatile and inflammable liquids and materials, and are demanding that the wooden container be given fair tests in competition with steel containers. The tests at Madison last week

were made for the purpose of gaining information for working up specifications of wooden barrels by the Bureau. The results of the tests will be issued in 60 or 90 days.

#### Prest-O-Lite Meets a Slight Rebuff.

The United States District Court in Cincinnati, O., will insist that Arthur C. Davis and Victor Gluchowsky, trading as Coughlin & Davis, who are Searchlight dealers. obliterate the Prest-O-Lite name from Prest-O-Lite tanks which are sold filled with Searchlight gas, but the court will not make the dealers explain to customers that the Prest-O-Lite service no longer attaches to the mutilated tanks; the Prest-O-Lite Co. recently secured an injunction, accounting and damages against the Searchlight dealers and this week sought to have the injunction extended. Under the court's ruling the Prest-O-Lite tanks may be refilled and sold with other than Prest-O-Lite gas, but the labels must be first removed.

#### Lavigne Develops New Steering Gear.

J. P. Lavigne, former chief engineer of the Lavigne Gear Co., and who also is promoting a cyclecar project, has organized the Advance Gear Co. in Detroit. The device to be produced is a steering gear that is of the worm-and-nut type, but differs considerably from other steering gears in that two sliding heads apply force to the trunnion shaft in such a way as to balance pressures and eliminate the necessity for thrust bearings.

#### Decent Treatment for Car Doors.

In the face of the fact that it is common practice to slam car doors, an automobile manufacturer advises strongly against the practice on the ground that, while it may possibly save a couple of seconds every time the door is closed, it racks the hinges and tends to loosen up the door and make it wobbly. It doesn't do the lock or catch any good and, worst of all, if there happens to be anything between the door and the jamb to prevent closing, the hinges get a terrific twisting strain that they should not be expected to stand, though they usually do—for a while.

#### Where Grease Guns Score One.

Grease guns may be a nuisance to use when there is some large receptacle—like a gearcase, for instance—to fill with lubricant, but one thing is certain where they are used: It is impossible for a hidden nut to be put into the gearcase with the grease, for it won't go through the grease gun. Incidentally, it is good practice to keep tight covers over grease cans in order to keep out the inevitable grit that will find its way in if the can is left open.

### 25 MILES AN HOUR SEEMS POPULAR WITH "SPEEDERS"

Record of Chicago's Automobile Court Discloses Interesting Figures-Of 1,527 Arrests 404 Were for 25-Mile Speed.

It is not necessarily that a car traveling 25 miles an hour is more dangerous than one traveling 50 miles, but a compilation of the record of the Speeders' Court in Chicago shows that of the 1,527 cases tried in June, July and August of this year, but one man was charged with going 50 miles an hour, while 404, or 26 per cent., were marked down as traveling at a speed of 25 miles. The fact that it is easier to say 25 than 26 may account for the fact that there were but 271 in the 26 classification.

Judge Fry, who "sat on" the speeders, in his report tells of the attempts at getting a "pull" by influential persons, which practice he says is now dwindling since it has been learned that the court is not susceptible to influence. The report declares that the Chicago public is traveling too fast to be careful. The arrests and the speed charged during the three summer months

Miles per hour. 20 21 22 23	No. of cases 4 6	Miles per hour. 36 37	cas	No. of es. 11 7
27 28 29 30 31 31 32 33 33 34	178 89 113 36 35 22	42 43 44 45 46 47 48 49 50		5 2 4 3 1 3 1

### River Figures in a Collision Suit.

It is generally conceded that an automobile can collide with a stone wall or a tree, but that a river may rank as an object of collision was held last week by the Municipal Court in Appleton, Wis., in an action instituted by Fred Felix Wettengill against the United States Lloyds. The river doesn't have to be frozen, either, before a car can

Wettengill's car was covered by a liability policy issued by the insurance company, one clause specifying damages "by collision." October 11, 1912, when Wettengill was driving in Green Bay, Wis., his car ran off an open drawbridge over the Fox river and the car suffered severely as a result. Wettengill made claim for \$776.19 damages, but the company refused to pay

on the grounds that a river was not an object of collision.

After the matter had been threshed out in court, Judge Ryan ruled that a river is "an object by which damages can be sustained to another moving object" and decided in favor of Wettengill. Many similar accidents are said to occur annually in Wisconsin, which renders the point important.

### Chicago's Mayor Was Arrested-Almost.

Mayor Carter H. Harrison of Chicago was arrested last week-almost-for using a "phony" license tag on his automobile; the reason he wasn't arrested was that the police justice wouldn't issue a warrant to State Chauffeur Examiner W. R. Dillon. Anyway, the mayor got a lot of publicity and was the center of a warm little situation which has not yet entirely cleared

The trouble began when Dillon charged that the mayor was using a different license number on his car than had been issued to him by the State; the car bore the number 93,400, whereas Dillon said the State had issued No. 91,400 to the mayor. When Dillon made his charge public Mayor Harrison was indignant and rushed to explain; he said he paid for a license and received a license pocket card, but that when the State was dilatory in delivering the license tags he had some painted.

The trouble seems to be that the mayor or the painter made an error and painted 93,400 instead of 91,400.

# Automobile Raffle Turns Out Badly.

Should any one contemplate raffling an automobile-for the benefit of a lodge fair or any other purpose—he want to get far, far away from Geneva, N. Y. A raffle which was to have been held there at a firemen's fair turned into an auction last week when the district attorney put the car up on the block in front of the City Hall and sold it

Despite the fact that the attorney for the firemen informed the crowd that the man who bought the car was "purchasing trouble," the prosecuting officer declared the law had ben violated and that the car was being properly confiscated. The proceeds will go to county charity work, provided the firemen don't succeed in upsetting the status of affairs.

# Los Angeles Police Developing Smellers.

"Smell his breath if you think he's drunk," is the substance of an order issued to the Los Angeles police by Chief C. E. Sebastian, at the outset of a campaign against intoxicated drivers; several accidents which were attributed to intoxication on the part of drivers is the immediate cause of the police activity.

### MOTORISTS IN TOPEKA ARE "TOO BLOOMIN' COURTEOU

Street Car Man Says They Gir Friends Rides and Cut Into Street Railway Receipts-How Supt. Patten Figures It.

The automobile owners in Topeka, Kan are "too bloomin' courteous!" So say Superintendent Howard Patten, of the Topeka Railway Co., who charges the Topes motorists with "robbing" the company \$150 a day.

He figures that 1,500 Topekans are picket up on the street corners and ride to and from downtown in the automobiles of their friends, which, if true, causes the street or company to lose 1,500 dimes, or \$150.

"The total figures look large, and the mean a lot to the street car company," the superintendent said. "We have noticed a reduction in receipts not in keeping with the normal growth of the city in the last fer years-the automobile is the cause."

Here is the way Mr. Patten arrives at his conclusion:

A man leaves the house in the morning walks out to his street corner and waits for a car. Along comes a friend in a motor car usually with one seat empty, and hollers to the strap hanger to jump in. Five cents lost to the street railway. There is still room for more and at another corner second friend is loaded into the machine

In the evenings and at noon the action is repeated.

Of course, Patten doesn't figure that all motor car owners pick up two passengers daily. Many men will ride down town with cigars elevated out of one corner of their mouths—their only companions, Others have no friends and care not. More than half are in this class and are not worrying the street car men.

"On the other hand," the superintendent continued. "there are many automobile drivers who will fill their machine in one trip. Hundreds of Topeka commuters ride down town every morning in the machines of their friends.

"The motor car itself was a great hardship on street railways. The man with the horse and buggy would not drive to the office. There was no place to 'put up' the horse. With the machine, a man can drive up to the curbing, throw a blanket over the hood, step in his office and forget about the car until noon."

Superintendent Patten claims that owners of automobiles in Topeka are the most courteous in the country, which, in his estimation, is "too bloomin' courteous."

# LOOMIN' COR

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# TS IN TOPEL WOMEN POLITICAL STUDENTS AND CHAUFFEURS "MIX UP"

Man Says & Anti - Automobile "Mass Meeting" Proves Peppery Affair -- Chairwoman Suggests Race Suicide to Lessen Accidents.

> When women get together for such purposes as political study, lots of things are likely to happen.

Take the "mass meeting" of the Women's Political Study Club at the Berkeley Theater on Monday night last, for instance-the meeting that was presided over by Miss Edith A. Reiffert, who has graduated from the study of political economy and become a full-fledged lawyer, and who, of course, will not be benefited by free advertising! Miss Reiffert is chairman of the club's committee on reckless driving, and the meeting was called for the purpose of studying or doing something or other to the automobilists of the Metropolitan district. Altogether, about 200 women were presentnot to mention the 10 or a dozen chauffeurs, representing the Society of Professional Automobile Engineers, who occupied the back seats. Miss Edith, terribly in earnest, banged the gavel often. Yes, she even "talked sassy" to no less exalted a personage than Secretary of State Mitchell May himself, and in the end she came right out boldly and suggested, or threatened, race suicide as the most likely means to prevent accidents in the streets.

It was not until after quite a batch of letters, from Mayor Kline, Frederic R. Coudert, Chief Magistrate McAdoo, Magistrate Paul Krotel and Magistrate John Freschi, had been read that the real fun commenced. All these men in their letters urged the necessity of remedial legislation with more vigorous punishment of offenders.

William Bentley, of the chauffeurs' association, asked permission to state the driver's side of the case.

Bentley declared the chauffeurs had come to the conclusion that the first and chief cause of accidents was incompetency, which the State abetted by a faulty system for the examination of chauffeurs; the second was intoxication, abetted by the police who "through some bond of sympathy for a drunken chauffeur" failed to arrest or stop him; third, the desire for speed and, fourth, overwork that made many a chauffeur after an 18-hour shift race home regardless of the lives of others. He said he had been in that frame of mind himself.

At this, Miss Reiffert brought down her gavel with a whack that would have done credit to a pile driver, and the pinwheels and colored fire commenced to go off.

### MOTOR WORLD

"Don't you dare say such a thing in this presence!" she exclaimed. "We won't have that said here!" Bentley retired in con-

When it came his turn to speak, Secretary May, whose car twice during the past month has figured in accidents of just the sort the Woman's Political Study Club seeks to abate, did not appear quite as chipper as usual, and instead of urging jail sentences for drivers he actually blamed pedestrians for the accidents that occur. Also, what there was to his address was even more plentifully punctuated by fireworks than was Bentley's.

"I am sorry to have to inject a discordant note into the meeting," said Secretary May, "but I cannot indorse for a minute many of the things here uttered, although I sympathize deeply with your aims. It is easy to promulgate laws as panaceas, but there is no such thing. No matter whether you reduce speed to four miles as your limit or 20 miles, the accidents will go on. and the more machines the more will be the accidents."

The chauffeurs in the rear seats applauded vigorously.

"As for the cause of these accidents," continued the Secretary, "the main cause has not even been intimated here tonight. The main cause is the recklessness of the people in the street."

The chauffeurs applauded more vigorously than ever at this announcement. Miss Reiffert arose and hammered with her gavel on the table with all her might. Her face was stern as she turned upon the Secretary of State.

"The speaker will proceed without interruption, and he will get only two minutes more!" she cried.

Secretary May, who had barely started to speak, looked at her in amazement.

"I regret, Mrs. Chairman, that I have been invited here," he said quietly.

The chauffeurs were loud in their protests. This seemed to startle Miss Reifert.

"Don't regret it, Mr. Secretary," she said. "It is getting late, and we'll have to take this matter up at some other time. The real cause of the accidents," she continued, "is because we women are so foolish as to bear children. But if you continue to run over them we won't bear them."

Secretary May was allowed finally to speak for 15 minutes. He told the women they should have the teachers in public schools tell the children how to avoid unnecessary danger in the streets, at least in the main arteries of travel. The Secretary of State closed his talk long before the 15 minutes were over and he repeated that he was sorry that he had come to the meet-

To quiet the clamor of the chauffeurs,

Miss Reifert, after refusing to let two their number speak for five minutes each promised that they'could speak longer the next meeting of the committee, which she said, would be a sort of open forum.

The Troubles of the Hon. Mitchell May Mitchell May, New York's Secretary . State, who was to terribly anxious to p motorists in jail, is having his own troubl these days. Only three weeks ago he pe mitted a State chauffeur to use a State c for private purposes and when the c skidded and three people were injured, the chauffeur, however, was not arrested.

On Wednesday of last week, a car co taining Mrs. Mitchell May ran over and s riously injured a boy in Brooklyn, N. Y and the chauffeur didn't stop, which latte is a serious offence in the eyes of the la and is a heinous offence in the eyes of son secretaries of state, and many other people When arrested later, the May chauffeur d clared that, although he felt a bump an looked back, he saw nothing. The next da he was discharged by Magistrate Nas who proved not only friendly to the chau feur but expressed himself as few magitrates nowadays express themselves con cerning motorists. He declared that th boy was to blame and remarked that th case is "but further evidence of the nee of protecting automobile owners from th careless use of the streets." Mr. Mitche May was in court when the decision wa

#### Governor Cox Won't Admit He's Beater

The car owners of Ohio realized that the had administered a severe set-back to Gov ernor Cox when they succeeded in having his high-handed Warne automobile revenu taxation law declared unconstitutional, and although efforts to compromise have been made by the governor's side of the con troversy the motorists are standing firm having been unable to shake them in thei determination not to be victims of the tax, which the governor had declared would be collected at all costs, the latte has ordered his legal department to carry the case higher.

### Effort to Regulate Pedestrians Fails.

Efforts to regulate the pedestrian in Peo ria, Ill.-one of the first efforts of the sor in this country-failed miserably. When last week the wise and solemn city fathers considered a new ordinance, which, among other things, provided that "any pedestrian crossing street intersections at other than right angles to the sidewalks" would be declared violating the law, they promptly eliminated the provision. The Peoria pedestrian, therefore, is free to "jaywalk" to his heart's content.





1,069,463. Variable-Speed Power Transmission.

John St. Vincent Pletts, Surbiton, England. Filed
Feb. 10, 1913. Serial No. 747,355. (Transmission
system with governor-controlled clutch.) 8 claims.

1,069,473. Transmission Mechanism. Joseph A. Ricard, Boston, Mass. Filed April 10, 1912. Serial No. 689,896. (Friction drive system). 4 claims.

1,069,480. Explosive-Engine. William Herman Schillinger, Rock Island, Ill. Filed June 4, 1910. Serial No. 654,956. (Opposed cylinder motor with air-compressing system.) 18 claims.

1,069,502. Priming Device for Internal-Combustion Engines. George R. Wadsworth, Cleveland, Ohio, assignor to The Peerless Motor Car Co.. Cleveland, Ohio, a corporation of Ohio. Filed Nov. 8, 1911. Serial No. 659,099. (Auxiliary manifold and auxiliary fuel supply for priming.)

1,069,514. Power-Propelled Sied. Albert Anderson, Glenwood, Minn. Filed Feb. 15, 1912. Serial No. 677,773. (Motor sled with propelling helix.) 2 claims.

1,069,516. Rotary Gas Engine. Martin Auensen, Cement, Cal. Filed Aug. 5, 1910. Serial No. 575,715. (Vane type motor). 2 claims.

1,069,525. Vehicle Wheel. James W. Calta, Platte, S. D. Filed June 20, 1912. Serial No. 704,892. (Springs between inner and outer rims.) 1 claim.

1,069,553. Resilient Wheel. Jesse H. W. Kepler, Preble county, near Eaton, Ohio. Filed Aug. 28, 1912. Serial No. 717,469. (Spring rim.) 1 claim.

1,069,572. Heater for Automobiles. Lester O. Naylor, New York, N. Y., assignor of one-half to Otto Hauerbach, New York, N. Y. Filed May 10, 1912. Serial No. 696,489. (Exhaust heater.) 5 claims.

1,069,589. Shock Absorber for Vehicles. Richard Tjader, New York, N. Y. Filed March 21, 1913. Serial No. 756,025. (Auxiliary spring shock absorber.) 3 claims.

1,069,590. Equipment for Automobiles. Claude Vernon Turner, Chicora, Fla. Filed April 18, 1912, (Device for pulling car out of mud, etc.) 1 claim.

1,069,592. Acetylene-Generator. Charles E. Wagner, Cedar Rapids, Iowa. Filed March 17, 1913. Series No. 754,785. (Tank to hold carbide cartridge.) 7 claims.

1,069,615. Automobile Lamp Mechanism. David Samuel Hughes, Racine, Wis., assignor of one-third to William C. Davis and one-third to Reuben E. Roberts, Racine, Wis. Filed Nov. 21, 1912. Serial No. 732,672. (Apparatus for turning headlamps with the wheels.) 2 claims.

1,069,624. Spring Wheel. Vol Martin, Abilene, Tex. Filed Feb. 1, 1911. Serial No. 605,978.( Annular springs.) 1 claim.

1,069,664. Internal-Combustion Engine. Matthew H. Anies, U. S. Navy. Filed June 13, 1912. Serial No. 703,518. (Rotating overhead valve mechanism.) 6 claims.

1,069,686. Spring Wheel. John E. Fisher and Thomas M. Andrews, Nashville, Tenn. Filed Aug. 9, 1912. Serial No. 715,947. (Combined radial and peripherial springs.) 3 claims.

1,069,693. Foot-Warmer for Motor Cars. Henry Evans, Forest Row, England. Filed April 11, 1908. Serial No. 426,452. (Hot water device.) 2 claims.

1,069,720. Steering (sear. Raford W. Peterson, Santa Rosa, Cal. Filed June 17, 1912. Serial No. 704,200. (Rope and drum arrangement.) 1 claim.

1,069,742. Continuous Action Rotary Engine. James Wallace Tygard, Pittsburgh, Pa., assignor of one-third to Henry A. Wise Wood, New York, N. Y. Filed July 14, 1900. Serial No. 23,583. (Internal combustion engine of rotary type.) 6 claims.

1,069,751. Combined Safety Cranking Device, Clutch, and Pulley for Explosive-Engines. George E. Wilson, Stillwater, Minn., assignor to M. Rumely

Co., Laporte, Ind., a corporation of Indiana. Filed Oct. 13, 1911. Serial No. 654,494. (Crank embodying clutch mechanism.) 3 claims.

1,069,778. Spring Tire. Harry M. Frank, Pulaski, Iowa. Filed Nov. 2, 1911. Serial No. 658,149. (Radial compression springs.) 1 claim.

1,069,794. Internal-Combustion Engine. Arthur A. Lazier, Buffalo, N. Y. Filed April 9, 1912. Serial No. 689,545. (Reciprocating rotary sleeve mechanism.) 6 claims.

1,069,806. Vehicle Running-Gear. Peter K. Olechna, Schenectady, N. Y. Filed Jan. 6, 1913. Serial No. 740,466. (Coil spring suspension.) 5 claims.

1,069,807. Resilient Wheel. Jacob G. Peck, Pertland, Ore., assignor to h. O. Peck Automobile Weed Co., Inc., Portland, Ore. Filed Nov. 27, 1911. Serial No. 652,669. (Radial springs in cylinders.) 2 claims.

1,069,808. Clutch control. Raford W. Peterson, Santa Rosa, Cal. Filed July 5, 1912. Serial No. 707, 880. (Combined positive and friction clutch.) 1

1,069,810. Steering Mechanism for Automobiles. Milton E. Riemer, St. Joseph, Mo. Filed Dec. 2, 1912. Serial No. 734,523. (Semi-circular drum and cable device.) 2 claims.

1,069,817. Carburetter. Walter F. Schulz, Brooklyn, N. Y. Filed Aug. 21, 1911. Serial No. 645,233. (Automatically varied gasolene and air control.) 11 claims.

1,069,818. Starter for Internal-Combustion Engines. Louis Schwitzer, Indianapolis, Ind., assignor to Schwitzer & Haltenberger, Indianapolis, Ind., acopartnership composed of Louis Schwitzer and Jules Haltenberger. Filed Nov. 27, 1911. Serial No. 662, 687. (Cylinder pressure type device.) 2 claims.

1,069,843. Automobile Turn-Table. Carroll N. Beal, San Francisco, Cal. Filed Aug. 28, 1912. Serial No. 717,600. (Platform supported on annular wheels.) 3

1,069,862. Safety Steering Device. Edward H. Davis and Elton J. Rhodes, San Martin, Cal. Filed Jan. 25, 1911. Serial No. 604,664. (Spring arrangement to maintain wheels parallel.) 2 claims.

1,069,885. Tire-Chain. Frank P. Larson, Plainview, Neb. Filed Jan. 15, 1913. Serial No. 742,206. (Non-skid device of sheet metal plates.) 4 claims.

1,069,955. Windshield Hinge. Charles H. Jockmus, Ansonia, Conn. Filed April 3, 1912. Serial No. 688,-175. (Device permitting adjustment to any position.)

1,070,044. Tire. Charles H. Lappe, Pittsburgh, and outer tubes made of sheet metal with a rubber tread.) 2 claims.

1,070,077. Vehicle Wheel. Ferencz Szabo, Magdalene, S. D. Filed Nov. 16, 1912. Serial No. 731,843. (Radial spiral springs.) 1 claim.

1,070,114. Shock Absorbing Attachment. John Carson, Centerport, N. Y. Filed Feb. 21, 1913. Serial No. 750,031. (Friction device.) 2 claims.

1,070,136. Means for Controlling the Escape of Fluids from Tanks. Allan G. Hurdman, Denver, Col. Filed Sept. 18, 1911. Serial No. 649,880. (Gasolene line Yale lock to operate valve within the tank.) 5

1,070,139. Explosive Engine. Martin C. Kessler, Denver, Col., assignor to The Kessler Motor Co., Denver, Col. Filed April 16, 1908, Serial No. 427, 422. Renewed Jan. 21, 1913. Serial No. 743,419. (Means for introducing compressed air at end of intake stroke to augment normal intake charge.) 2

1,070,266. Sparking Plug, Iwane Koutkine, St. Petersburg, Russia. Filed May 8, 1912. Serial No. 695,988. (Multi-point plug with central electrode held by bayonet slots.) 1 claim.

1,070,449. Air-Admission Regulator. William F. Green and Laud C. Gates, Modesto, Cal. Filed Dec. 10, 1912. Serial No. 735,922. (Throttle valve with intake to box around exhaust pipe.) 1 claim.

1,070,521. Gas Engine. Albert F. Parks, Cheltenham, Pa. Filed May 24, 1911. Serial No. 629,122. (Twin-cylinder motor with extra compression chamber.) 3 claims.

1,070,538. Transmission Mechanism. Harry Beauregard Ross, Denver, Col., assignor to The Ross

23 28

Transmission Gear Co., Denver, Col., a corporative of Colorado. Filed May 17, 1912. Serial No. 697. 862. (Constant mesh sliding gear transmission.)

1,070,539. Wind Screen, Particularly for Mote Vehicles. Rudolph Emil Rothe, Vienna, Austria Hungary. Filed May 3, 1912. Serial No. 694,911 (Fan in central hole of windshield.) 1 claim.

1,070,540. Horn. Kuroji Sato, Berkeley, Cal. Filed July 17, 1912. Serial No. 709,995. (Pedal connects engine-operated mechanical horn.) 5 claims.

1,070,551. Automobile Wheel-Tire. Christian A Spittell, Newark, N. J. Filed Aug. 23, 1911. Seni No. 645,570. (Continuous peripherial flat spring) 5 claims.

1,070,583. Valve Mechanism for Internal-Combution Engines. John Burgh, Denver, Col. Filed Jan 24, 1912. Serial No. 673,101. (Overhead sperical retary valve mechanism.) 5 claims.

1,070,653. Wheel for Road Vehicle. Walter Wright. Coventry, England, assignor to The Dunlop Pnermatic Tyre Co., Ltd., Coventry, England. Find Oct. 23, 1911. Serial No. 656,290. (Mechanism for detaching and attaching wire wheels.) 3 claims.

1,070,670. Emergency Tire for Automobiles. Samuel Davidson, Indianapolis, Ind. Filed July 10, 1911. Serial No. 637,669. (Wheel to be attached to spoke for emergency use.) 5 claims.

1,070,672. Device for Fastening Automobile-Tops Henry G. Dreyer, Cleveland, Ohio. Filed Feb. 20. 1911. Serial No. 741,571. (Forward strap and bracket.) 3 claims.

1,070,702. Spring Wheel. Joseph A. Kramer, Mineral Point, Wis. Filed Dec. 15, 1911. Serial No. 665. 934. (Alined flat springs and linkage.) 4 claims.

1,070,715. Cushion-Tire for Vehicle Wheels. Dec Clifton Munger, Ellsworth, Wis. Filed Dec. 16, 1911. Serial No. 666,164. (Peripherial U-shaped springs.)

1,070,772. Driving Gear for Automobile Vehicles. Jules Caillet, Paris, France, assignor to Societe Anonyme des Automobiles Peugeot, Paris, France (Filed Sept. 10, 1907. Serial No. 392,124. (Tubular torque member with yoke to rear axle containing differential mechanism.) 4 claims.

1,070,821. Vehicle Wheel. Celestin Lampre, Pittsburgh, Pa. iFled June 18, 1912. Serial No. 704,369. (Armored pneumatic tube with solid tread.) 1 claim.

1,070,874. Igniting Device for Gas Engines. Ray V. Cornell, Centuria, Wis. Filed June 23, 1911. Serial No. 634,848. (Low-tension wipe-spark mechanism.) 1 claim.

1,070,890. Vehicle Driving Mechanism. Edward M. Heylman, Janesville, Wis. Filed Nov. 8, 1909. Serial No. 526,871. (Combined friction and gear mechanism.) 14 claims.

1,070,937. Automobile Clutch: Angel Afanador. Peru, Ind. Filed May 1, 1912. Serial No. 694,395. (Internal expanding device.) 7 claims.

1,070,949. Resilient Wheel. George Dorffel, Oakland, Cal. Filed Aug. 30, 1912. Serial No. 717,899. (Plurality of radially disposed spiral springs.) 4

1,071,003. Carburetter. Theophilus James Bradler Drayton and Frank Knight Woodroffe, Liverpool, England. Filed March 1, 1913. Serial No. 751,517. (Automatic adjustment of atmospheric temperatures.)

1,071,031. Antiskidding Device for Vehicles Charles W. Cramer, Scranton, Pa. Filed Sept. 7. 1911. Serial No. 648,112. (Metallic projections at inner side of tire.) Five claims.

1,071,032. Vehicle Wheel. Charles W. Cramer. Scranton, Pa. Filed Sept. 21, 1911. Serial No. 650. 527. (Demountable rim with bolting on arrangement.) Two claims.

1,071,038. Primer for Internal Combustion Engines. George F. Fischer, Newark, N. J. Filed with pipe to intake.) Four claims.

1,071,059. Gas Engine Starter. Stephen S. Krayer, St. Louis, Mo. Filed June 28, 1912. Serial No. 706,395. (Cylinder pressure pneumatic type.) Fight



E VERY dealer and every motorist in the country has been waiting for the right Six—and here it is. They've wanted a Six selling at the right price-they've wanted a Six built by a manufacturer with years of experience—and a reputation for building a reliable product of the highest quality. That's just what this new National Six is -the right Six at the right price-backed by the quality, faith, integrity and honesty of product that have made the National car world-famous. The **National** Company

were the first builders of successful 6-cylinder cars. making their first in 1905. Every one still in service.

### Successful and Safe

Business with the National car is certain the year around. The public knows the National quality and has confidence in both car and builder.

We can use a few dealers in territory where we are not already represented.

Get into business to stay. Stop guessing -stop taking chances. Once a National dealer always a National dealer. Build a permanent, profitable business with National cars.

Lavish in Comfort

This new National embodies all our internationally recognized principles of superiority. Beautiful, economical, efficient and lavish in comfort—this car is the climax of the National's success in car building since its pioneer beginning. It marks a most coveted improvement in motor car designing It is the one car that harmonizes from end to end-a symmetrical creation that is distinctive and essentially practical.

**Brief Specifications - National Six** 

Motor, six-cylinder, 334 x 5½-inch, cast en bloc. Tire pump, integral part of motor. Clutch, selfcontained aluminum cone. Starting and lighting, electric two unit sysand lighting, electric two unit system. Transmission, sliding gear selective type, three speeds forward, one reverse. Gauge 56 inches. Oiling, crank case constant level, force feed, with gear driven pump. Ignition, high tension, dual magneto with storage battery. Tires, 36 x 4½. Firestone demountable rims. Air pressure gasoline feed, generated by small pump in crank case. Capacity 23 gallons. Automatic carburetor Two sets of brakes on 16-inch rear wheel drums. Bevel gear drive through straight line shaft with

carburetor Two sets of brakes on 16-inch rear wheel drums. Bevel gear drive through straight line shaft with universal joints and torsion member. Full floating rear axle. Left side drive. Access all four wide doors. Single lever in center controls all speeds. Half elliptic springs, front, special *National* construction, rear. Equipment:—Top complete with side curtains and boot, ventilating rain vision windshield, extra Firestone rim, electric lighting and starting systems, 12-inch double bulb electric headlights, electric license tail light, Warner speedometer, electric horn, tools and jack.

FIVE. FOUR-CYLINDER MODELS, \$2750 TO \$3400

Dealers'

Best Seller

for 1914

Write for complete information, Today NATIONAL MOTOR VEHICLE CO. Indianapolis, Ind., U.S.A.

# Hupmobile

# We Believe the Hupmobile to be the Best Car of Its Class in the World

This is the creed of "The Car of the American Family." It is believed and expressed and lived by every Hup dealer and sub dealer in every State in the Union.

The letter below from the Hupp dealer Port Elizabeth, South Africa, demonstrates that "we believe" is now the world - wide sentiment and conviction of Hup Dealers:-



How Dealer Rogaly Centers South African Interest on the Hupmobile.

Crowd at H. J. Rogaly's Port Elizabeth Headquarters at the start of a 5,000-mile tour which took the Hup to Capetown, Kimberley, Bloemfontein, Johannesburg, Durban, East London and back to Port Elizabeth, over roads which are well nigh impassable in the wilds of interior Africa, through the unpopulated Transparation, rock strewn highways of Bechuana land and the hills of Cape Good Hope Peninsula.

Messrs. The Hupp Motor Car  $C_{0,,}$ Detroit, Michigan, U. S. A. Dear Sirs:

WE BELIEVE

We wrote you some time ago promising that we would shortly revert to the pamphlet so kindly sent us under this

shortly revert to the pamphlet so kindly sent us under this title. We really feel that there is little for us to say further than that we heartly endorse every word of it. As a mathan that we heartly endorse every word of it. As a mathan you do, in so far as it is our belief that not only is than you do, in so far as it is our belief that not only is world." But that it is: "The best car of its class in the districts of South Africa, irrespective of class or price." As you will no doubt have noticed from the copies of not been afraid to advertise our belief largely, and we or ridiculed, is a good proof of the respect which our car public.

We do not hesitate a moment in our belief that this

We do not hesitate a moment in our belief that this We do not hesitate a moment in our belief that this opinion has been won through sheer merit.

Without boasting in any way, we may say that this particular means we have adopted to put our car on the

market have been commented upon in very flattering terms by all classes of the community, but we do not fail to tell lished its own name through the exceptional qualities which it embodies and which make it so eminently suitable to the requirements of this country.

Jeased with the improvements in the new models, which gublic generally that you are continually doing everyables as class, so extremely well satisfied. A great point of assistance to all HUPMOBILE dealare, as a class, so extremely well satisfied. We may honsatisfied with their cars than any other set of owners.

This also refers to our Hupmobile sub-dealers, of which mow have about forty.

satisfied with their cars than any other set of owners.

This also refers to our Hupmobile sub-dealers, of which we now have about forty, covering practically every inch of our territory, from Capetown to Zambesi. They are all them would willingly exchange it with that of any other car.

Yours faithfully. H. J. ROGALY. JOHN NORDLINGER.

Such letters as this—we have hundreds of them—demonstrate the unity, Such letters as this—we have numerous of them—demonstrate the unity, the enthusiasm and the loyalty of Hup dealers across the continent and the enthusiasm and the loyalty of riup dealers across the continent and across the world. More than that, they demonstrate the reason for such

HUPP MOTOR CAR CO., 1254 Milwaukee Ave., Detroit, Mich.

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Thich took the little Port Elinkunpopulated In

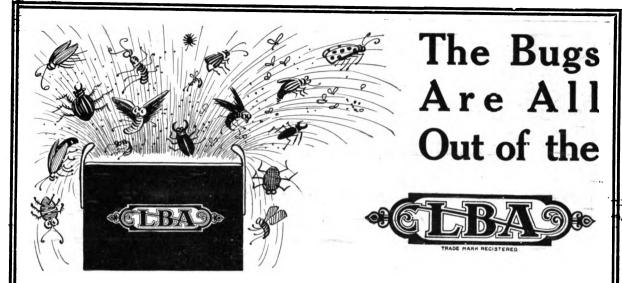
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# Storage Battery

At some stage of its adolescence most every device is more or less bug ridden.

The LBA is no exception to the general rule — we admit, frankly it had bugs at one time, though it was never so thoroughly infested as some of its contemporaries.

But when one knows where bugs exist and desires to be rid of them, they can be eradicated. If not cleaned out, they grow and thrive and multiply in true bug fashion.

We were well aware of the LBA bugs and we determined to make our storage batteries too hot for their residence.

It took some time, but today the LBA is bugless while some storage batteries are BUG HOUSES.

### Don't Buy a Battery With Bugs In It!

The great majority of manufacturers do not like buggy batteries; that's why they have selected the LBA for their exclusive use with starting and lighting equipment.

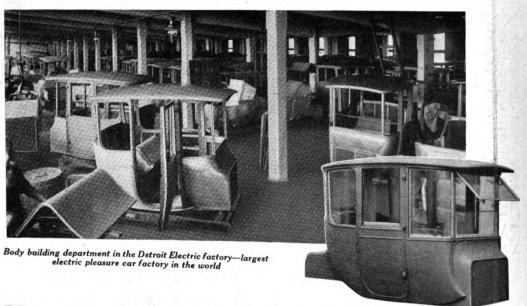
### WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd Street. Detroit Branch: 1191 Woodward Avenue. Chicago Branch: 2241 Michigan Avenue. San Francisco Branch: 243 Monadnock Building.

Indianapolis Branch: 438 and 439 Indiana Pythian Building.

Service Stations in all principal cities in the United States, Canada and Mexico.

(79)



# How Quality Is Built Into Detroit Electric Bodies---a Point for Dealers

Every dealer knows that appearance is a prime factor in selling an electric automobile. To some purchasers it is the only consideration. Mechanism is too often forgotten—or taken for granted. Beauty of line is sought always; grace of curve, elegance of finish, luxury of upholstery,

In the building of a Detroit Electric "quality first" is the watchword, both in the making of the mechanical parts and in the designing and finishing of the bodies.

Thus, in the Detroit

Electric is created a degree of mechanical and esthetic perfection to be found in no other electric. That is why sales of the Detroit Electric are double the sales of any other electric.

The Detroit Electric is the only electric with a one-piece aluminum top. This material is imported especially for us. Aluminum is used in the Detroit Electric body wherever it will add to beauty or strength



-in the panels, window sash and moldings, hoods, roofs. Though costly, aluminum makes for long life of the body. It is lighter in weight than steel and can be more easily shaped into artictic

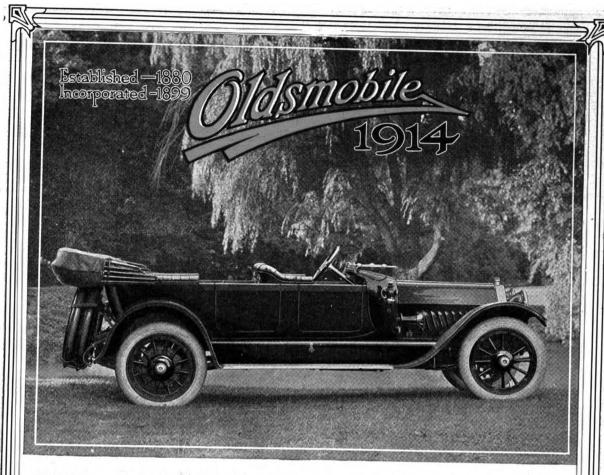
forms. It will not warp; it will not crack;

Rattling and squeaking, too, are unknown in Detroit Electric bodies. Noise is eliminated. Felt cushions separate the top from the framework of the body; rubber cushions separate the body itself from

Write for the new illustrated Detroit Electric catalog.

### Anderson Electric Car Company DETROIT, MICHIGAN

Largest Manufacturers of Electric Pleasure Vehicles in the World



# THE SURVIVAL OF THE FITTEST

Never, since the beginning of the automobile industry has there been such a determined insistence on genuine motor car value as there is at the present time.

Olds Motor Works has built into the Oldsmobile, since the very first model, a quality which has always been recognized as the utmost in automobile practice and engineering.

The 1914 Oldsmobile is the development of this foresight and sound policy, and now stands—the greatest of all sixes.

Throughout the entire automobile manufacturing field are makers who are exploiting sixes, but the public is now educated to appreciate quality and reputation in a motor car, just as in any other commodity, and the inevitable has happened—the demand has settled upon a six-cylinder motor car with reputation, experience and stability behind it. The day of the makeshift is over.

The popularity of the Oldsmobile this year is a natural outgrowth of this insistent desire for quality. The Oldsmobile was a pioneer in the six-cylinder field, and during the past decade has witnessed the passing of many newcomers. Now that the time has arrived when motor car purchases are made on merit alone, it has been fittingly and deservedly acclaimed "the greatest six-cylinder car ever produced."

### A Few Words to Dealers

You are probably familiar enough with prevailing conditions to recognize the truth of the above statement. We believe it would be to your advantage and profit to sell a car with the reputation, stability and quality of the Oldsmobile—at a price astonishingly near to that of cheaper makes, and considerably lower than that of any other car in its class.

We have some territory open which we can allot to responsible dealers. Are you prepared to take advantage of this opportunity?

Combination 4 or 5-Passenger Phaeton, Touring Body Type, \$2975 Seven-Passenger Touring Body, \$175 Extra :: Limousine, \$4300

OLDS MOTOR WORKS, LANSING, MICH.





# Mr. DEALER---You Ought To Know

Before closing your 1914 Contract that WE are entering our Eleventh year of Continuous Manufacturing of Motor Trucks.

WE have more orders on our books for trucks now, than in any December in the history of our business.

# There Are Reasons For It-Think It Over

Write Us Today for Particulars of Our Complete Line of WORM DRIVE TRUCKS

# ATTERBURY MOTOR CAR COMPANY

Black Rock, Dept. "M.W.," Buffalo, N. Y.



Here's a "Four" with more POWER than a "Six"

\$2400

# **MOLINE-KNIGH**

More Power -- More Flexibility—More Economy— More Silence

No other dealer can compete with you on this Greatest Knight Motor

Power without noise-speed without jolt

Knight Engine The twenty-five foreleads in Europe most cars in Europe today are Knight motored. No matter what type of the old style poppet valved engine you are selling, your

competitors have a poppet valved engine built on the same principle—so you are compelled to put up a pretty stiff argument why the prospect should buy a car from you instead of from the man across the street.

SmashesWith the greatest competition Knight Motor on your

salesroom floor - the Moline-Knight-you can forget competition and spend your time making sales—you will have something new to talk about—something different — indisputable arguments that will bring you profitable sales. Your profits will not be spent in service afterSells without Motorists who have argument

demanded Sixes with more power and flexi-

bility will buy the Moline-Knight. And those who have wanted Fours with low cost of upkeep will buy the Moline-Knight, too.

At least investigate this big, roomy, fivepassenger, four-cylinder, 128-inch wheelbase, guaranteed 50 B. H. P., electrically equipped Moline-Knight-the car that anticipates the requirements of your trade.

Write quick Write at once for our Advance Information Folder — it contains description, specifications and illustrations. In requesting Advance Folder you promise nothing, obligate yourself in no way-so write today.

See the Moline-Knight at the big Auto Shows -get in communication with us before our output is allotted.



The "Four" that makes the "Six" unnecessary



### WINTON SIX

Long stroke motor, left drive, center control, ele tric lights, self-starter, fu mohair top, easily ha curtains, rain-vision front, best Warner speedometer, Waltham eight-day clock, Klaxon electric horn. tire carriers, four-cylinder tire pump, demountable rims, full set of tools, German silver radiator, metal parts nickel finished. Fully equipped, \$3250

HE supremacy of the Magnetic Speedometer will be more evident than ever at the coming automobile shows. Over 90% of

Ahrens-Fox American Apperson Auburn Austin Bailey Benton Benz Brintwell Fuick Cadillac Cartercar

Case Century Electric Chadwick Chalmers Church-Field Cole Columbia Crawford Crescent Crow Cunningham Detroit Electric

Easton Federal Truck Fiat Gabriel Truck Garford Great Eagle Grinnell Havers Haynes Henderson King Kissel

all the high-priced cars will be equipped with Warner (magnetic) Auto-Meters. Following is the list of high-priced cars that are now Warnerized:

Lyons-Knight McFarlan Marmon Maxwell Moon Multiplex Oakland Ogren Ohio Electric Pathfinder Peerless Pierce-Arrow Pilot Premier Ramble Rambler
S. & M.
S. G. V.
Seagrave
Seitz
Simplex
Speedwell
Stafford

Staver Stevens-Duryea Stutz Tate Tate
Touraine
Traveler
Velie
Westcott
White
Winton
Zimmerman

See that the car you buy is

Peerless

Chicago, Ill.

Stewart-Warner Speedometer Corporation Branches and Service Stations in all principle cities Beloit, Wisc.

# SPRINGFIELD CONVERTIBLE BODIES

With a Springfield Convertible Body, a few minutes work will turn the open touring car into a handsome luxurious closed car.

This radical departure from the unsightly, uncomfortable, ordinary top, is the final result of three years' development and it is today the *only* practical all-year-round body on the market.

When open, there are no signs calling attention to the fact that the body can be entirely enclosed in glass—just an ordinary closed top is visible.

When in position, the Springfield Convertible Body gives a beautiful glass enclosed, weather proof car with wide doors free from obstructions—in every way equal to the permanently closed car in appearance and comfort.

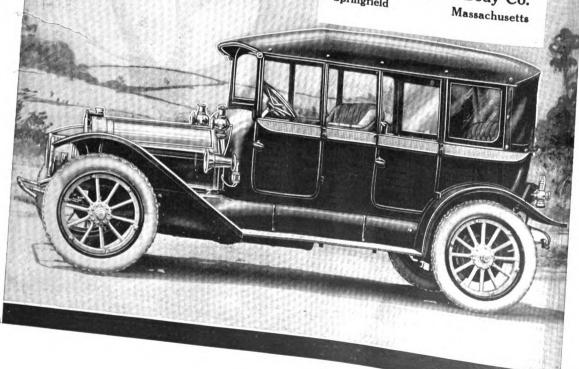
The transformation can be worked in remarkably short time through the simple operation of raising the top and adjusting the glass windows which are contained in a box back of the front seat when the car is open.

The Convertible Top feature is exclusive on Springfield Metal Bodies. It will not fit any other body, but we are prepared to make prompt deliveries on all designs from the little runabout to the largest limousine or landaulet.

Further information is at your command. Write for it.

Springfield Metal Body Co.

Springfield Massachusetts



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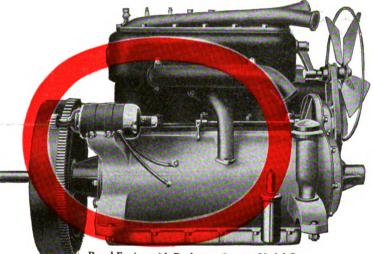
Co.

he-STARTER hat laughs at frost

THEN Jack Frost congeals the oil, and the engine and gears are hard to turn, the starter that does its work quickest is the one that is hardest to stall. In other words, the one that exerts the biggest torque when turning very slowly.

The Rushmore Starting and Lighting System is regular equipment in America on:

**MERCEDES DeDION-BOUTON** ISOTTA-FRASCHINI **AUSTRIAN DAIMLER DELAUNAY-**BELLEVILLE



The Rushmore Starting and Lighting System is factory equipment on the following cars:

> SIMPLEX **MERCER LANCIA** ALCO STANFORD KLINE **KNOX** REGAL **CRANE**

Regal Engine with Rushmore Starter, Model C

When a motor is stalled or nearly so, the current it takes is limited only by its ohmic resistance, because the counter electromotive force is then nil. Now, here is the first point—

The bigger that stalling current, the bigger the torque it produces.

And, as the stalling current depends only on the ohmic resistance, clearly, the lower the resistance, the harder the motor will be to stall—the more doggedly it will set to its job of "breaking loose" the stiff motor.

The second point-

The lower the ohmic resistance (other things being equal) the smaller the energy loss and the higher the operating efficiency in normal running.

The Rushmore Starter has a tremendous maximum torque for the same reason that it has a high operating efficiency, namely, the fact that its ohmic resistance is very small for its size and power.

The Rushmore Model C Starter, despite its small size, has an efficiency from battery to flywheel of 75 per cent., which is about 50 per cent. higher than that usually obtained. It exerts, when stalled, a turning effort twelve times that exerted at its normal speed of 1300 r. p. m.

When we add that a stone cold engine in winter takes only about double its summer turning effort to spin it, the defeat of Jack Frost is clear. The Model C Starter will "break loose" the coldest engine within its normal capacity (which means any engine up to 50 h. p.), and in a very few turns it will warm that engine up to summer spinning speed. The heat of compression will evaporate the gasoline that gets to the cylinders, no matter how cold the carburetor may be, and a prompt start is assured. a prompt start is assured.

For large engines up to 6 cylinders,  $6\frac{1}{2}$  x 8, we furnish Starter Models A and B. They are much used on trucks and fire engines and in motor boats.

The Rushmore Starting and Lighting System is factory equipment on the following cars:

SIMPLEX **ALCO** KNOX

MERCER STANFORD REGAL.

LANCIA KLINE CRANE

The Rushmore Starting and Lighting System is regular equipment in America on:

Mercedes, DeDion-Bouton, Isotta-Fraschini, Austrian Daimler, Delaunay-Belleville

RUSHMORE DYNAMO WORKS Plainfield, N.J.

The RUSHMORE

# ENATIONAL UTO SHOWS

Under Auspices of Automobile Chamber of Commerce, Inc.

At NEW YORK

# Grand Central PALACE

January 3 to 10

# One Show One Building

Passenger Cars—Motorcycles—Accessories

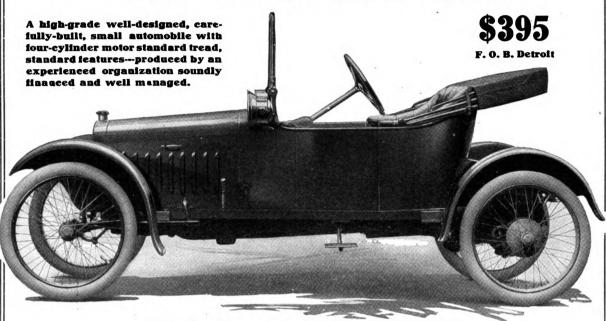
At CHICAGO, January 24 to 31 Coliseum and 1st Regiment Armory

Both Shows Bigger and Better Than Ever

S. A. MILES, Manager

7 East 42nd Street, New York City

# The SAXON Car



The price of \$395 includes lamys, top, adjustable windshield, baggage box, tools and tire kit

VERYBODY in the motor trade realizes that the small car, so popular in Europe, is the coming thing in America. In the Saxon, at \$395, we offer you the first genuine small automobile at a price within the reach of everyone. The organization back of this car is a guarantee of the car itself, of the business policy that will be pursued with dealers and customers, of the ability of the company to turn out cars in large numbers and of assured quality.

#### Good---and Good-Looking

The Saxon meets the demand for a low priced car that is not only good, but good-looking. It is a big car for the price, with 96-inch wheelbase, roomy body, ample leg room, generous doors. There is nothing skimpy or cramped about it. Molded oval fenders, tapered bonnet, streamline body, graceful, sweeping curves make this car a delight to the eye.

The Saxon is amply powered. The high-speed, 4-cylinder motor, (25% in. bore x 4 in. stroke) with large gear reduction in the rear axle, gives great pulling power and great flexibility. The car lugs along wonderfully well through mud and on hills. It throttles down to five miles an hour or speeds over the road at 40—and without unpleasant vibration or jarring.

#### Standard Features Throughout

Standard motor car practice has been followed in all the essential features of the car. The 4-cylinder engine; the progressive sliding gear transmission; the dry plate clutch; the shaft drive with concentric torque tube; the semi-floating rear axle with sturdy pressed steel housing; the drop-forged, heat-treated I-beam front axle; the standard type of steering gear.

In all these features the Saxon uses the same type of construction as is used in cars costing all the way from \$1000 to \$3000. The materials in this car are of thoroughly high grade. In fact, the specifications for

thoroughly high grade. In fact, the specifications for

metal used in the frame, springs, body, motor, axles, and various forgings throughout are identical with the specifications for material in \$2000 cars.

### Two Reasons for Price

There are two principal reasons why we can offer you such a car as the Saxon at the price. FIRST, the car has been designed from the very beginning with the idea of BUILDING it ECONOMICALLY.

the very beginning with the idea of BUILDING it ECONOMIC-ALLY.

SECOND, on account of our connections and the organization back of the car, we are able to purchase materials and utilize them to the best advantage.

Saxon engineers have done something absolutely remarkable in the way of designing a car of thoroughly high quality for economical manufacture. For example, the motor is so constructed that cylinders and crankcase are cast all in one piece. Wherever possible one part has been made to do the work of two or three—thus saving material, cutting down labor cost and securing lightness. Drop forgings have been used instead of castings and machined parts. Transmission and axle are built as a unit, saving material and labor. The body, the floor and the luggage box have been formed of steel stampings. The entire sub-frame and sod pan under the motor have been formed from one large steel stamping. The water p u mp has been eliminated by the thermo-syphon system.

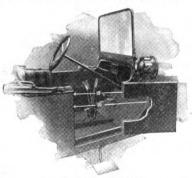
#### Simplicity of Design

The car is so designed that it is simple to make and simple to put together, thus reducing the labor cost of assembling. All these savings have made possible the unexampled price and the extraordinary quality of the Saxon.

As you read the

Saxon.

As you read the following description of the Saxon, please note how careful designing has helped to make it possible to produce such a car at the price.



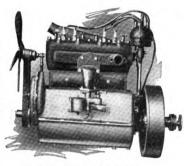
Interior View of Saxon

The open door, 18 inches wide, is cut away to show the ample leg room, 30 inches. Control levers, pedals, steering wheel and horn are shown

# The SAXON Car Is

### Description of the Saxon Motor Car

MOTOR-The Saxon motor car is exceptionally clean-cut and business-like in appearance. It is of the "L"-head type with fully enclosed adjustable valves. Cylinders are 25/8-in. bore by 4-in. stroke. A water jacketed head, fitting over the entire cylinder block, is easily removable and gives ready access to the cylinders and valves.



Saxon Motor-Right Side

Showing cylinder block and crank case cast integral, enclosed valves, intake and exhaust manifold cast integral, carburetor and Atwater-Kent distributor

Pistons and connecting rods of high-grade material and exceptionally light. This lightness in the reciprocating parts makes this motor practically free from vibration.

The motor is lubricated by a new and very effective method called Vacuum Splash oiling system. Oil is circulated and held at a constant level without a single moving part, thus securing utmost simplicity and economy through the elimination of the oil pump and its connections.

The carburetor is of especially designed Mayer make, very simple and very efficient. The 6-gallon gasoline tank is carried in

Ignition is supplied by the Atwater-Kent system used on several of the best \$2000 cars. Experience has shown that the six dry cells used

will last for the entire season without renewal. Replacement, when necessary, is very inexpensive.

TRANSMISSION is of the sliding gear, progressive type, used on many medium priced and some of the highest priced cars. It gives two forward speeds and reverse. The use of this type of transmission and its location on the rear axle eliminate a number of pieces in the shifting mechanism-another feature of design making

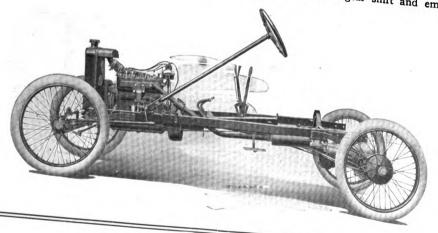
for economy in the building of the car.

CLUTCH-The clutch is asbestos faced, dry plate, 3-disc type, very similar to the clutch used on some of the highest priced cars. Insofar as smooth action and long life are concerned, it is fully equal to the clutch used in large cars, and at the same time, contains less than half the usual

AXLES-The Saxon axles, both front and rear, are of the same type of construction as used on cars selling from \$2000 up. The front axle is a single piece drop forging, I-beam section. The

rear axle is of the semi-floating type, with pressed steel housing, similar to that used on leading

CONTROL-The Saxon car has the modern left-hand drive with gear shift and emergency



# a Good Small Car

brake levers in the center, permitting entrance from either side of the car. The clutch and service brakes are controlled by separate pedals, placed in a convenient position. The throttle is controlled entirely by the foot accelerator. The spark lever is on the dash, thus leaving the 16-inch steering wheel entirely free from levers.

WHEELS — The ball-bearing wire wheels add greatly to the up-to-date appearance of the Saxon. They are 28 inches in diameter, with 28 x 3 inch clincher tires.

BODIES—In body design as well as in mechanical features, the Saxon is far ahead of any small car yet produced in America. The body, which is exceptionally large and roomy, is of the genuine

streamline type, from the tapered bonnet in front to the capacious baggage box at the rear. The body lines are smooth and harmonious, giving a very pleasing appearance.

These bodies are of sheet steel and wood construction. The floor is of pressed steel—a very economical and durable construction. The frame of the car itself forms

the bottom of the body, another feature of economical design.

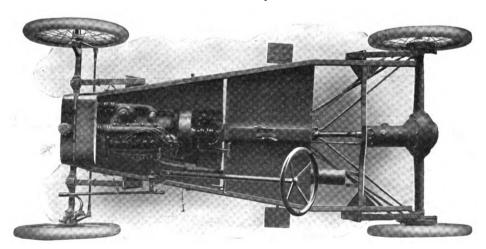
The seat is 40 inches wide and 16 inches deep, well upholstered and exceedingly comfortable; ample leg room is provided. Doors are 18 inches wide, neatly hung and well fitted. The doors have concealed hinges and door handles on the inside, thus leaving the outside of the body perfectly smooth.

The molded fenders are of an entirely new oval design, without moldings, beads or sharp corners. These fenders not only add greatly to the beauty of the car, but afford utmost rigidity and give fullest protection from dust and dirt. They are absolutely free from rattle.

SPRINGS—The Saxon spring suspension is of the cantilever type, a new fea-

ture for American cars. The body is suspended between the axles rather than over them, permitting the use of a longer wheelbase than would be possible with other types

of springs. This unusual spring suspension is chiefly responsible for the easy riding of the car—one of the most striking qualities of the Saxon.



# The SAXON Car

### Specifications of Saxon Car

Front Axle—Single-piece drop forging, I-beam section, heat treated. Ball bear-ings in hub.

Front Axle—Single-piece drop forging, Ibeam section, heat treated. Ball bearings in hub.

Rear Axle—Semi-floating. Pressed steel housing. Outer end of drive shaft carried on Hyatt Roller Bearings. Differential—two pinion, plain bearing.

Brakes—Two sets brakes on rear wheels. Service brake 8 in. diam. lined with heatproof material. Emergency brake, steel on steel 7 11-16 in. diam. Both brakes 1½ in. face.

Body—Streamline, two-passenger. Seat 16 in. deep, 40 in. wide, 30 in. from heel board to dash. 18 in. door.

Control—Left-hand steer. Center control. Throttle control by foot accelerator, spark control on dash.

Transmission—Sliding gear, progressive type, two speeds forward, one reverse. Transmission mounted on rear axle. Main drive shaft of transmission is carried on Hyatt Roller Bearings. Other bearings hardened steel on cast iron.

Drive—Shaft drive, one universal joint, concentric torque tube.

Clutch—Dry plate, five plates, steel on asbestos.

concentric torque tupe.

Clutch—Dry plate, five plates, steel on
asbestos.
Frame—Channel section pressed steel 3 in.
x 1¼ in. x ¼ in. x ½ in.
x 1¼ in. x ½ in.
Fuel—Gravity feed from 6 gal. gasoline
tank, located under cowl.
Ignition—Atvater-Kent, 6 dry cells.
Tread—Standard.
Wheel see—96 inches.
Tires—28 x 3-inch clincher.
Wheels—28-inch, wire spokes.
Steering Gear—Bevel gear type, sector and
pinion, 1¼ in. diam. steel tube post, 16in. wheel. Drop forged steering connections.

tions.

Horse Power—15.

Motor—L-head, four cylinders cast en bloc, crank case integral, 2½ in. bore, 4 in.

crank case integral, 2½ in. bore, 4 in. stroke.

Yalves—Steel stem, cast iron head, 13-16 in. diam. x ½ in. lift.

Cam Shaft—Drop forged special steel, diam. 1 in., cams integral, driven by helical gear, two bearings.

Crank Shaft—Special drop forged steel, two bearings, front 1½ in. diam. x 2 in.; rear 1½ in. diam. x 3 in. Crank bearings, 1½ in. diam. x 1½ in. crank bearings, 1½ in. diam. x 1½ in.

Connecting Rod—Drop forged steel, I-beam section, 8 in. centers.

Crank Shaft Bearings—Bronze, babbitt-lined.

Oiling System—Vacuum feed, splash dis-tribution. Cooling—Thermo-syphon, cellular radiator,

Cooling—Thermo-syphon, cellular radiator, fan.
Springs—Cantilever type, front 22 in. long, 1½ in. wide; rear 23 in. long, 1½ in. wide; main leaf vanadium stel.

Equipment—Top, windshield, two gas head lights, oil tail light, gas generator and bulb horn.



Rear View of Saxon Showing baggage box with t.p raised, oval fenders, rear axle with trussed pr. ssed-steel housing



Saxon Motor Car---With Top Up Note the tapered bonnet, streamline body, onal fenders, wire wheels, left drive, adjustable windshield and general trim appearance

### Special Saxon Features

### Good Looks

The first handsome small car.

### Left Drive, Center Control

Permits entrance from either side.

### Power and Flexibility

High speed, long stroke motor, with large axle reduction, gives 5 to 40 miles per hour on high gear, and great pulling power.

### Low Cost of Upkeep

25 miles or better per gallon of gasoline; 100 miles per pint of oil; low tire cost on account of light weight.

### Vacuum Splash Oiling System

Efficient, economical, simple, no moving parts.

### Freedom From Vibration

Pistons and other reciprocating parts well balanced, light but strong.

### Cantilever Spring Suspension

Gives this car, with 96-inch wheel-

base and 28-inch wheels, the riding comfort of larger cars.

### Streamline Body

Handsome, stylish, up-to-date.

### Molded Oval Fenders

Distinctive apeparance; thorough

### Lets of Room

Wide, comfortable seat; ample leg room.

### Wire Wheel

Light, strong, stylish, easy on

### Sliding Gear Transmission

Progressive type, used on many higher priced cars.

### Multiple Disc Clutch

Dry plate type, asbestos-faced.

Large Carrying Compartment at Rear Adjustible Ventilating Windshield

Vanadium Steel Used In Many Parts

# Now Is the Time for Dealers to Investigate

For a car like the Saxon there is an unlimited market. Many thousands For a car like the Saxon there is an unlimited market. Many thousands of people who have not been able to afford cars at former prices are ready and waiting to buy a car like this one.

The field is almost unlimited.

Declared in a poidly being allowed. d waiting to buy a car like this one.

The field is almost unumited.

Perhaps yours is open. Write or wire if you want to get in on this money-making proposition.

The Saxon Motor **Company** Detroit, Mich.

Dia			
Please send Motor Car.	literature	regarding	Saxon
Name			
Street	••••••	• • • • • • • • • • • • •	
City	••••••	• • • • • • • • • • • • • • • • • • • •	
If you are	••••••	State	
If you are a you handle and	dealer, please what terris-	se state wh	at cars
		AND AOR COA	er.

200

"Play" in the bearings of your automobile is caused by grit and dirt working into the bearings and grinding between the surfaces.

In Hyatt Roller Bearings foreign matter is forced into the hollow center of the roller through the spiral slots, keeping the surfaces clean.

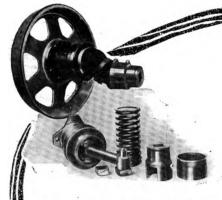
This exclusive Hyatt feature obviates wear in the bearing, and keeps gears and shafts in alignment, reducing the noise that arises from this source.

Two books, one about motor car bearings in general for prospective purchasers, the other for automobile owners, will be sent on request

. "Hyatt Quiet Bearings"



HYATT ROLLER BEARING CO.



# One or two good concerns who want the better class of workmanship

will find on investigation that KONIGSLOW gives a brand new idea of value and service on CLUTCHES and the things that go with them.

If everybody realized that the CLUTCH is the point of contact with the driver—the place in the car where he feels things -KONIGSLOW simply couldn't supply the demand.

As it is, there are some few good responsible concerns who know this. They want a CLUTCH that reminds the driver he is driving a mighty good car. To such manufacturers our products will appeal. We promise the right workmanship and the

Don't wait until you are ready to place orders—write us today. Remember KONIG-SLOW'S CLUTCHES talk for you more than they do for KONIGSLOW.

The Otto Konigslow Mfg. Co., Cleveland

DETROIT OFFICE: J. H. Gould, 1202 Majestic Bldg.

For Clutches Rocker Shafts Control Levers Universal Joints

See



# Mr. Manufacturer: The Surest Way to "Profit by Your Mistakes" Is Not to Make Them!

The biggest single opportunity for the car manufacturer to make a mistake is passed in safety when he decides on the

You can buy better and cheaper from a SPECIALIST than from your own "Motor Department"

"sweet tempered" Part That Sells the Car



Buda Model "T"-4 cyl.

One reason why "it sells the car" is that car buyers have become aware of the unequalled worth of the BUDA Motor and (you know it's a fact)

When The CONSUMER Knows What He Wants, - "arguments are not in order.

His educated preference is a mighty force in your favor and to have him on your side, you must give him what he wants.

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BRANDENBURG AND COMPANY

FORD BUILDING, DETROIT

1914 Specifications:

apport.
Model "M" furnished in separate
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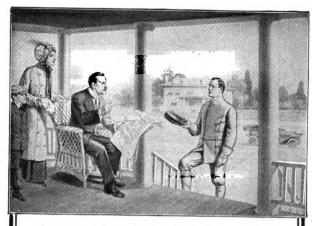


Model "SS" Buda "Little Six"

57TH AND BROADWAY, NEW YORK CITY

1108 SOUTH MICHIGAN AVENUE, CHICAGO

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"I know you are a careful driver, but it is best to adopt every device to prevent accidents.

"I can't afford to take any chances. We have all foolishly depended on rubber alone long enough. It's time to awake to our responsibility. So go at once and buy a complete equipment of Weed Chains and never start out without them when the roads or pavements are slippery or greasy."

# Weed Anti-Skid Chains

Insure Against Anxious Moments



Probably no other device has done so much to raise the factor of automobile safety as WEED CHAINS. They are the proverbial "ounce of prevention" against skidding, the cause of over ninety per cent of all automobile accidents—Life Insurance and Accident Insurance Companies strongly endorse them and recommend their use. Taxical Companies, for their

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### **Increasing Demand**

for WEED CHAINS makes them the **most profitable** Automobile Accessory handled by Dealers—Quick and Steady Sales—No Dull Seasons—No Dead Stock—Easily Handled—Liberal Profits—Universal Satisfaction.

Attractive, convincing, decorative, lithographed hangers supplied to dealers upon request.

At all dealers selling Auto Supplies

Weed Chain Tire Grip Co. New York

Manufactured in Canada by

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Save time and money on repair jobs! Don't send out your repair work. You can now do it yourself—and save a lot of time for your customers and money for yourself.

Don't buy and wait for new parts! You can make old parts as good as new by using the

## Cox Welding Outfit For Welding and Carbon Removing

Complete in every detail. Will do every possible welding job. Very simple in construction. Can be used on parts of iron, steel, brass, bronze and aluminum. Any average mechanic can become adept in its use in a short time. We furnish complete instructions with each outfit. It is safe and sure. Every job you do means—Extra Profit for You.

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Guaranteed

# BALL BEARINGS

To facilitate supplying demand for garages, dealers and owners, for New Departure ball bearings, the following distribution agencies are announced, where stock of these

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Long satisfactory life whether in use or on shelf.

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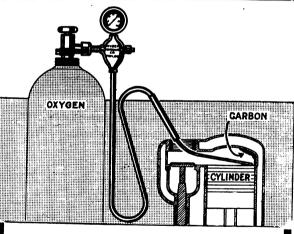
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(without oxygen tank)

Usual price \$15. As we sell for cash only and no accounts carried, customers are given \$5.00 off on every outfit. Express companies allow inspection—you take no chances.

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Investigate the B. & W. before your customer's car is stolen. Every motor car owner needs constant and complete protection against the thief and joy rider.

The only Positive Crank Lock manufactured that absolutely locks the crank in engagement with crank shaft, making it an impossibility to start motor

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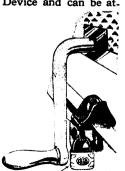
It is a Positive Locking Device and can be attached by anyone in ten minute's time.

The B. & W. Lock is finished in black enamel and provided with a strong lock and two keys. To be attached to the front axle as shown in cut.

Price \$1.50

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are a distinct asset to every Ford owner in that they insure against plug trouble. SPLITDORF PLUGS cost more than many makes of plugs on the market, but they are WORTH MORE and are really the cheapest in the long run. The highest priced automobile as well as the most popular priced car must have the BEST PLUGS to get the BEST MOTOR EFFICIENCY, and SPLITDORF "COMMON SENSE" PLUGS have always been the standard for effective results.

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THERE is no method yet discovered of ascertaining the pressure in the inside of a tire, except by the use of a pressure gauge. A casing containing 40 pounds of air looks and feels exactly like a casing containing 80 pounds. If your tires require 80 pounds and you only give them 40, they're on the quick road to the scrap-heap.

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NO Electrical Wiring Battery Expense

Motophone—was devised to meet the rapidly changing conditions which prevail in the Automobile Industry—to be an absolutely efficient—thoroughly dependable warning signal—WITHOUT being a constant source of expense to the owner.

AUTOMOBILE SUPPLY MFG. CO.

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Made in JERSEY CITY, N. J. by the

# Joseph Dixon Crucible Co.

Transmission and differential troubles are unknown where this perfect graphite lubricant is used: because the special Dixon's flake graphite it contains sticks to the gear surfaces and stops noise and wear.



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One and one-half ton Chassis and Driver's Seat,

J-M Non-Burn Brake Lining is made of the long, tough fibres of pure asbestos, reinforced with strong brass wires. Due to this construction, the intense frictional heat, produced when brakes are applied, cannot char or burn this lining. The action of oils, water, grit, etc., won't impair its gripping power or cause it to rot and wear out. J-M Non-Burn has proved by actual tests that it outwears twelve ordinary brake linings.

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never fails to stop a car almost instantly in emergencies, yet you can stop car gradually and smoothly when desired.

"J-M Non-Burn" is stamped on every piece. Be sure you get the genuine. If your dealer hasn't it, send your order to our nearest Branch.

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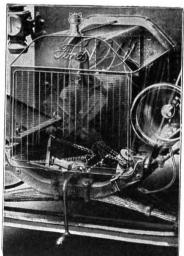
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ENGINE: 35% x 4 Two Cylinder, 4 Cycle Water Cooled. WHEEL BASE: 69" Tread 44".

Price \$400.00

Agents wanted everywhere

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An automatic regulator of gas and air mixture acting with the throttle to insure perfect combustion under all conditions

The most scleatific and efficient aid to better carburetion.

Write for our booklet on motor car economy

See the EMPIRE ECONOMIZER at the "Vesta" Exhibit, New York Show

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The Only Genuine Streamline Motor Car Built in this Country

This epoch making automobile with VULCAN ELECTRIC GEAR SHIFT, WESTING-HOUSE ELECTRIC STARTING AND LIGHTING, BOSCH MAGNETO, and WIRE WHEELS. Priced at only \$2400. Electric Gear Shift-\$2250. Without

"FOURS" and "SIXES"-\$1775 to \$2850 Write or Wire

PULLMAN MOTOR CAR COMPANY, York, Pa.

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AXLES AND SPRINGS ARE INVINCIBLE

THE SHELDON AXLE COMPANY WILKES-BARRE, PA.

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# Abbott Detroit

The best car value in the market and a 10% greater net profit for the dealer are the two big inducements we offer live aggressive direct agencies. Write today.

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### Maxwell Motor Co., Inc. DETROIT. MICHIGAN

### Maxwell District Offices

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# Bosch Plugs

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should be listed in the catalogue of every dealer.

Free electros sent to any dealer who will show proof of publication.

Bosch Plugs had more than a 100 per cent. increase in sales -are you getting your share? All orders shipped promptly from nearby distributing points.

> If you didn't get the Bosch News for December write for it now.

**BOSCH MAGNETO COMPANY** 224 West 46th Street

Ontroder Correspondentes de Campara de Campa

We furnish you complete, a new wooden steering wheel rim, with the heater installed (as indicated with illustration) and wire connection from wheel to magneto which furnishes the heat. To turn on the heat you insert the plug in socket nearest the ribbed part or heater on left-hand side of wheel. To turn off heat, remove plug and place in next adjoining socket.

The heating coil is composed of an indestructible metal tube in which is carried a heavily insulated heating wire. It is impossible to get a shock.

The rim we furnish is all ready to serve won in place of the rim you now have.

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Write today for detailed description.
Satisfaction guaranteed.
Price, \$10. Prepaid in U. S.

The Warm Hand Steering Wheel Corp., Inc. Poughkeepsie, New York

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GUARANTEED



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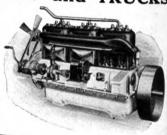
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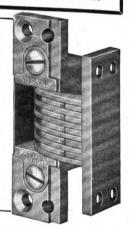
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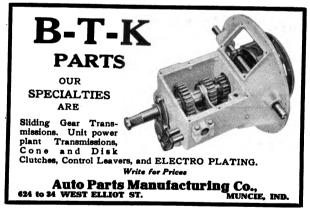
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# MOTOR WORLD

A Trade Paper Giving the World's Motor News

Vol. XXXVIII

New York, January 1, 1914

Ten cents a copy Two dollars a year

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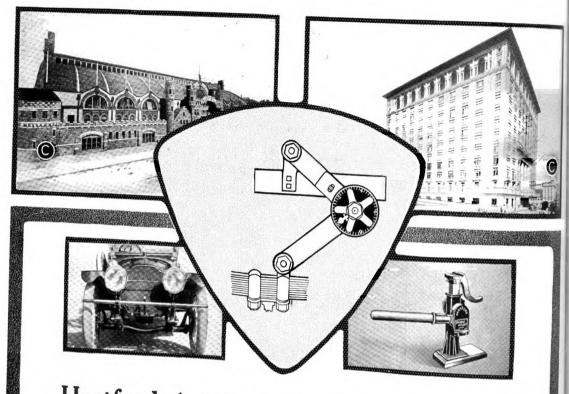
This means that the

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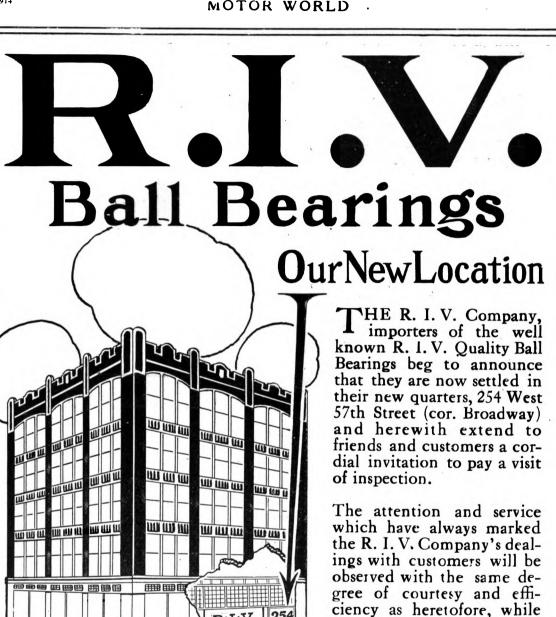
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"The car that made good in a day"
"The car that makes good every day"

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Since then no radical changes have been necessary—just a few details have been altered insuring even greater service and power, with a touch here and there which have added to the graceful beauty lines for which all Stutz models are famous.

#### Each Car Personally Built

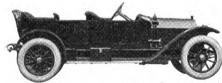
Each Stutz car is built under the personal supervision of Harry C. Stutz, designer and engineer, and the car which bears his name has grown in popularity, in a few short years, until it is now often referred to in the automobile world as "the car that sells itself."

#### Unquestionable Financial Backing

The same conservative policy followed in designing, building and selling the Stutz is applied to the financial end of the business. And this is important to you as the future owner of a Stutz—or as a Stutz dealer. Write today for our new Series E catalog, No. A-15.

DEALERS: We can still take on a few more dealers, with whom we are willing to make a liberal, profitable contract—write or wire quick.

### Stutz Motor Car Co. of Indianapolis



Six-Passenger Touring Car Four-Cylinder, \$2150 Six-Cylinder, \$2400.

STuTZ — the car that made good in a day



Electric head, side tail and dash lights Storage battery 35 Horsepower motor 114-inch wheelbase

#### SPECIFICATIONS:

Three-quarter floating rear axle
Timken and Hyatt bearings
Deep upholstery
Brewster green body,

nickel and aluminum trimmings Mohair top, curtains and boot Clear-vision windshield

Stewart speedometer Cowl dash Electric horn Flush U doors with concealed hinges

THE value of the cars and accessories of all the manufacturers exhibiting at the Grand Central Palace will be over \$6,000,000.00.

But the value of he 1914 Overland business will be nearly \$60,000,000.00—ten times as great.

And the Overland factories to take care of this tremendous business are 40 times as large as the Grand Central Palace, in New York

For catalogues address Department 50

# The Willys-Overland Company

Manufacturers of the famous Overland Delivery Wagons, Garford and Willys-Utility Trucks.

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Vol. XXXVIII

New York, U. S. A., Thursday, January 1, 1914

No. 2

### COLBY FINALLY GOES INTO STANDARD MOTOR COMPANY

The \$6,000,000 Enterprise, However,
Passes Into Iowa Hands—Fourwheel Drive Vehicle Also Involved in New Deal.

After all, the Colby Motor Co., of Mason City, Ia., has been absorbed by the Standard Motor Co., the \$6,000,000 Delaware corporation which, in October last, sought to merge the Colby company with the Minneapolis (Minn.) Motor Co., the latter of which manufactures motorcycles. At the eleventh hour, that deal fell through and the Colby future since has been in doubt.

Apparently, however, the personnel of the Standard company, of which the Colbys were a part, has undergone considerable change and has passed from the hands of the Minnesotans to those of Iowa men. At any rate, the board of directors of the Standard company, which just has taken over the Colby interests, is made up of North Iowa bankers, as follows: Isaac Sweigard, Garner; R. C. Plummer, Forest, City; W. T. S. Rath, Ackley; and George H. Fuller, Rockwell. J. W. Hatcher, of Nevada, Ia., is also one of the moving spirits in the project.

The transfer of the Colby property has already been recorded, the consideration named being \$300,000. In addition, the Standard company has acquired the Nevada Mfg. Co., which, under the Rosenberg patents, has been manufacturing in a small way four-wheel drive vehicles in that Iowa city. The plant in Nevada will be discontinued and the business concentrated in the Colby factory in Mason City, where, in addition to Colby cars, the intention is to produce both trucks and tractors.

#### Disco Assets Prove of Small Value.

Creditors of the Disco Co., of Detroit, which went into the hands of a receiver late in November, are not likely to realize much

more than 25 per cent. of their claims, the total of which aggregates \$159,700. The assets are listed at \$182,545, but much of this amount is represented by engine starters that are practically valueless because of failures of or cancellations by the car manufacturers for whom they were made. The Disco trustee, the Security Trust Co., will offer the Disco plant for sale on January 14th.

#### Mora's Power Wagon Also "Goes Broke."

Building motor trucks in Ohio did not prove more profitable for S. H. Mora than did the manufacture of motor cars in New York. As a result, the Mora Power Wagon Co., of Cleveland, was last week thrown into the hands of Frank H. Adams, as receiver. Adams is treasurer of the company, whose liabilities are about \$14,000 and assets about \$12,000. Mora's New York enterprise failed about two years ago, but soon afterward he acquired support in Cleveland, where he organized the wagon company bearing his name, which, however, failed to make any particularly visible progress

#### Claims Motor Washer is Infringed.

Albert F. Wagner, of 18-20 West 63rd street, New York City, who patented a motor cleaner July 22, 1913. under the number 1.067,891, filed suit this week in the United States District Court for the Southern District of New York against the B. & L. Auto Lamp Co., of New York City, alleging that his patent has been infringed; he asks the injunction and other relief customary in infringement actions.

#### Bosch Takes Out a Canfield License.

Effectually disposing of reports that the Bosch Magneto Co. was inclined not to recognize the Canfield patent, a license under that patent was issued to the Bosch company late last week by A. R. Mosler & Co., the owners of the Canfield rights. The Auburn Ignition Mfg. Co., of Auburn, N. Y., also has been added to the list of Canfield licensees.

### JUDGES PLAY "PING PONG" WITH HESS-BRIGHT PATENT

One Judge Batted It Up and Now His Confrere Bats It Down—F. & S. Bearing Held Not to Infringe —Decision Far-reaching.

It has long been axiomatic that judges do not always agree, but a new and striking instance of this sort was presented this week in the United States District Court for the Eastern District of Pennsylvania, where judgment was rendered for the defendant in a suit brought by the Hess-Bright Mfg. Co. against Fichtel & Sachs, both widely known makers of ball bearings.

March 10, 1910, Judge Holland, sitting in this court, held that a notched-race bearing infringed the Robert Conrad ball bearing patent, No. 822,723, and this week Judge McPherson, in the same court, decided that a notched-race bearing does not infringe the patent. This latter ruling held that the F. & S. bearing does not infringe the Conrad patent under which Hess-Bright manufactures.

The Hess-Bright company based its charge of infringement on the claim that unless the notch in the edge of a race is less than 44/10,000ths of an inch from the center of the groove the edge is "continuous" and this infinitesimal measurement assumed large proportions in the suit. But it was so small the court "couldn't see it."

The attorney for Fichtel & Sachs was William A. Redding, who only recently figured as the attorney for A. R. Mosler; in the Mosler case Redding succeeded in having sustained the Canfield recessed spark plug patent when it was generally supposed the case was hopeless, and in the present litigation a patent, generally recognized as comprehensive, was successfully evaded.

The 1910 decision of Judge Holland was rendered in a suit brought by Hess-Bright against the Standard Roller Bearing Co..

and while the latter employed a notched race it was declared an infringer and thereafter paid thousands of dollars in royalties at the rate of 10 per cent. on the net sales. Others which succumbed following this Hess-Bright victory were the Adams Repair Co., of New York City, the Keller Mfg. Co., of Philadelphia, and the Duntley Mfg. Co., also of Philadelphia. The fourth suit was that against Fichtel & Sachs, which just has been decided. The substance of the opinion is that, so far as the Conrad patent is concerned, the F. & S. and other notchedside bearings are entirely different from the Hess-Bright device.

The patent was granted June 5, 1906, and is owned by the Deutsche Waffen und Munitions Fabriken, of Berlin; the Hess-Bright Mfg. Co. is the sole American licensee, and these two were the complainants. Hedwig Fichtel and Ernst Sachs comprise the firm of Fichtel & Sachs, which employs between 3,000 and 4,000 men in Schweinfurt, Germany, and operates another plant in Lancaster, Pa. The J. S. Bretz Co., of New York City, is the American distributer of F. & S. bearings and entered into the defense of the suit.

Conrad's patent-to which prior instances were cited-covered a bearing in which the race edges were solid, the balls being inserted by eccentric displacement of the inner and outer races, his intention being to avoid the troubles which had been caused in notched races by the fact that where the notch entered the groove the balls "bumped" and were damaged. After the balls were inserted it was necessary to space them so that they would not collect at one side and fall out.

The F. & S. balls are inserted through notches cut in the inner and outer races; by this process more balls can be inserted than by the Conrad process and the spacers are not necessary to prevent the bearing disassembling. The notches, however, do not come quite down to the level of the bottom of the grooves in the races, but the Hess-Bright contention was that the "effective" side of the groove extends upward from the center of the bottom but 44/10,000ths of an inch and that, even though a race were notched, if there remained at the bottom this much or more, the edge, so far as the patent was concerned, was continuous and unbroken. With this contention the court, however, did not

"In my opinion what Conrad had in mind," said Judge McPherson, "and sought to protect, was a solid structure, unbroken in every part, and therefore altogether free from openings into the raceway. He knew that this would overcome the weakness of former constructions, and this was one of his principal objects. Another object was

to secure a smooth, continuous raceway, free from the least irregularity of surface. He was obliged to content himself with a limited number of balls, and, still further, he was obliged to use spreaders, or spacers, to perform a new function, namely, to distribute the balls and to keep them apart, in order that the balls and the spreader acting in unison might hold the bearing together as a unitary structure. It was not to prevent friction between adjacent balls, but to make a unitary structure, that he used the spreader. For, if he did not distribute the balls and hold them apart, they would run together, the rings would become eccentric, a crescent shaped space would develop, and the bearing would disassemble. . . But I think . . . the patent . . . must be confined to the rings, solid and unbroken throughout, upon which Conrad laid repeated and emphatic stress. This is the central thought of his invention, and I am not prepared to follow the plaintiff's experts, and to give the patent a construction now that makes it cover any ball-hearing whatever, even if only the minutest fraction of unbroken surface is shown at the bottom of the raceway.

"How such a minute fraction as 44/10,000 of an inch would 'overhang' is not perceptible; and moreover, any filling-opening is a departure from the patent in an important particular, because it inevitably weakens the bearing, and to that extent is disadvantage-

"This weakening was one of the defects in the prior art that Conrad sought to remedy by making his rings solid in all their parts. He nowhere alluded to the 'sides' of his grooves in any way that would justify the elaborate theory that has been offered on behalf of the plaintiffs. The 'sides' overhang the balls; the 'sides' are continuous and are practically integral throughout their circumference; the 'sides' are practically integral throughout the entire length of the rings; the space between the 'sides' of the grooves is slightly less than the diameter of the balls.

"I do not understand how the 'sides' of the raceway can be continuous and practically integral if they are cut in half, or so nearly in half that 44/10,000 of an inch further would finish the job-and this is the conceded situation in the defendant's bear-

"I think the defendants' supplemental brief summarizes accurately the material differences between the patent and the de-

"There are three features which the Conrad patent has pointed out and emphasizes as characteristic of his alleged invention. They constitute his invention. They are: (1) Continuous, unnotched, and unrecessed rings; (2) The limited number of balls (only

as many balls as can be inserted by top trically displacing the ring plus peria one), and (3) Distributing means, necess to prevent the bearing from falling at and having that function.

"'The defendants' bearings lack each m of these characteristics, and, on the trary, contain its exact opposite: Notched, recessed rings; (2) A large and ber of balls (from one to several more in could be inserted by displacing the in eccentrically), and (3) A ball-spacing is vice, which is not necessary for prevent the bearing from falling apart, and has such function.'

"Without further discussion I state m opinion to be, that the defendants do m infringe; and if this conclusion be come the plaintiffs must fail. The defense laches, which would otherwise need const eration, will not be dealt with. A decre may be entered dismissing the bill at the costs of the plaintiffs."

Had a complete consideration of the uation been necessary for the determinant of the issue the court's opinion of the pater might have been of interest; in but ou instance did it pay great heed to priori and then stated that apparently the F. & bearing was a nearer approach to the Ger try, an old English patent, than to the Con rad invention. Decision favorable to lies Bright would have given it control of the annular ball bearing business in the United States, which it partially had following the 1910 decision.

#### Stearns Declares 10 per Cent. Dividend

Stockholders of the F. B. Stearns Co., Cleveland, are not among those who should complain of "hard times." In July last the received an 8 per cent. dividend on the holdings, and at an adjourned meeting held last week an additional cash dividend of per cent. was declared, making a total of 18 per cent. for the year. The Stearns company's stock is made up wholly of preferred shares; there is no common stock and in bonds or mortgages are outstanding. the meeting at which the 10 per cent div dend was declared, the old officers were reelected, as follows: Frank B. Stearns, preident; Roy F. Clark, vice-president, and E McEwen, secretary and treasurer.

Murphys of Buffalo Owe Century Tire.

The Century Tire Co. this week filed suit in the Supreme Court for New York county against Michael P., James D., Patrick W and William P. Murphy, trading in Buffalo as Murphy Bros., alleging that the Mur phys have failed to pay their account; is stated that between April 2 and 30, 1913 goods to the value of \$141.97 were supplied and that but \$10.80 was paid, leaving a balance of all the state of all th

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### PEERLESS DISPOSES OF NEW YORK AND CHICAGO BRANCHES

Silver Takes Former, McDuffee the Latter — Company Makes Frank Explanation—Silver Recalls a Former Experience.

No hitch having developed in the negotiations reported in last week's Motor World,
C. T. Silver, or, strictly speaking, the C. T.
Silver Motor Co., is now the New York
agent for the Peerless car; and today's the
day that Silver moves across Broadway and
takes possession of the Peerless Motor Car
Co.'s marble palace, which is one of the
most imposing of the several imposing
structures on automobile row. He takes
the Overland agency with him.

The Peerless company's discontinuance of its branch in New York proves to be a part of its policy to discontinue such establishments, the Peerless branch in Chicago having been taken over by the McDuffee Automobile Co., which henceforth will handle the Peerless car on a dealership basis. John R. Buck, manager of the Peerless Chicago branch, will become a part of the McDuffee organization.

Disposing in advance of possible rumors that the company's action might presage a reduction in the price of its cars, E. J. Kulas, general manager of the Peerless company, states that a reduction "is not thought of; in fact, it is entirely impossible." He frankly admits that the discontinuance of branches is in the nature of "readjusting the proportion between selling and manufacturing expenses, the selling expense generally in the high grade motor car business having been found too high."

Silver's acquirement of the Peerless representation in New York serves to accentuate the changes wrought by three short years. The atmosphere of the Peerless branch was as cold as the marble of which the structure itself is constructed, and few persons whose interests did not require it entered the building a second time. The effects of the frigidity, rigidity and toploftiness were well instanced by Silver himself in discussing the new order of things.

Three years ago, he stated, when he was handling Overland cars in Brooklyn, he sought to obtain the Brooklyn agency for the Peerless and, as a preliminary thereto, he naturally called at the Peerless branch. He quickly felt the chilling atmosphere and, after an unsuccessful effort to transact business standing on one foot, he took his departure, possessed of very much more heat than when he entered. He returned to Brooklyn and applied himself so assiduously to the sale of Overland cars that he

since has become a factor in the metropolitan trade who must be reckoned with at all times.

#### Attachment Against Swinehart Vacated.

The attachment which John Z. Lowe and other trustees of the bankrupt New York Commercial Co. secured in the Supreme Court for New York county against the Swinehart Tire & Rubber Co., of Akron, O., was vacated this week in the United States District Court for the Southern District of New York, to which the case was transferred several weeks ago; the complainants, the bankrupt having been a crude rubber importer, claimed \$22,362.67 on a contract with the Cuyahoga Rubber Co., of Akron, which the Swinehart company guaranteed.

The Swinehart company, in asking for the vacating of the attachment, claimed various irregularities in the proceedings; it alleged the contract was not with the Cuyahoga company but had been signed by the Swinehart company and that other details were incorrectly alleged in the complainant's statement of its case.

#### Men Chosen to Handle New Meteor.

The Meteor Motor Car Co., of Piqua, O., which, as stated in Motor World last week, took over the Shelbyville (Ind.) corporation of the same name, has elected Maurice Wolfe president and general manager. S. M. Arni is vice-president and Charles F. Hicks, secretary and treasurer. In addition to these three, Stanhope Boal and J. T. Neilson comprise the board of directors. Wolfe was the former head of the Indiana company. It is expected that the plant on Washington avenue in Piqua will commence operations January 5th.

#### Hupp Sends Steenstrup to Far South.

Peter S. Steenstrup, one-time sales manager of the Hyatt Roller Bearing Co., who, after a two years' stay on the Pacific Coast, recently returned to Detroit, has been appointed South American representative of the Hupp Motor Car Co., of that city. He will sail from New York January 15th and will make his headquarters in Buenos Aires. His appointment indicates that the Hupmobile people are "going gunning" for South American trade in real earnest.

#### Date Fixed for Sale of Lansden.

January 1st has been set as the date for the trustee's sale of the assets of the Lansden Co., of Newark, N. J. The assets comprise the factory, machinery and parts and patents for the manufacture of electric vehicles. Shortly before the company's failure, last summer, its property was removed to Allentown, Pa., but was ordered returned to Newark by the court.

### "HAVOLINE" NOTHING LIKE "VALVOLINE," SAYS COURT

Charge of Unfair Competition and Trade-Mark Infringement Fails— History of "Oline" Family Bared.

Havoline Oil—"It Makes a Difference"—does not compete unfairly with Valvoline Oil—"Best by Every Test." The names do not sound alike, the advertising slogans are widely different, the Havoline Oil Co. has not played the business game unfairly, and there is no reason why the Havoline company should be enjoined from using the name it has made known by six years of effort, according to a decision rendered this week in the United States District Court for the Southern District of New York.

The action was brought by the Valvoline Oil Co., of New York, against the Havoline Oil Co., of New York, and the Indian Refining Co., the owner of the Havoline company. It was charged that the Havoline name and emblem infringed the Valvoline trade mark and that competition had been unfair, and the customary injunction and damages were asked.

The defense was a denial of infringement and unfair competition and a separate defense of laches in that the Valvoline company failed to prosecute the Havoline company until it had been in business for several years. The court laid much stress upon the business which has been built up by the Havoline company, and in commenting upon the "ine" family of trade names cited these registrations: Cosmoline, 1870; Purcline, 1871; Amberline, 1871; Carboline, 1873; Septoline, 1876; Rosoline, 1880; Hanoline, 1895; Vacuoline, 1896; Cycoline, 1896; Fusoline, 1899; Autoline, 1905.

Judge Mayer, who wrote the opinion, said he saw no similarity in the containers or labels or in their colors and that the only instance of the preemption of the Valvoline motto was by an advertising manager who is now dead.

"If I did not know anything about motor oils," said Judge Mayer, "and some one told me to buy 'Valvoline' the word 'valve' would be impressed on my mind. True, 'Valvoline' has been held not to be descriptive, yet, just as the English court held, . . . . so would I, as a purchaser, think that it had something to do with valves. Of course, I would soon discover that 'Valvoline' had a wider meaning, but when I heard 'Havoline' I would think it was some coined word or perhaps some technical term, and it would not suggest 'Valvoline' to me.

"I think we must realize modern conditions," said Judge Mayer, in touching upon

the lapse of time before the suit was brought. "Men can build up new businesses these days in a period of time which would have seemed amazingly short years ago. . . I am of opinion that equity as applied to modern business developments requires that, in this particular case, injunctive relief in any event be denied. No satisfactory explanation is given for the delay and, during that time, the defendants have spent thousands of dollars to create a valuable asset in the word 'Havoline.' . . .

"There are cases where delay is excusable. . . . But it cannot be equitable for a well-informed merchant with knowledge of a claimed invasion of right, to wait to see how successful his competitor will be and then destroy with the aid of a court decree, much that the competitor has striven for and accomplished—especially in a case where the most that can be said is that the trade mark infringement is a genuinely debatable question.

"It is not unlikely that had complainant in 1908 properly notified defendants' predecessor, the latter would just as soon have adopted some other mark; and, if not, then the controversy could have long since been decided without substantial loss to any-

"That complainant, in any event, would not be entitled to an accounting is clear, and . . . I am also satisfied complainant is not entitled to prevail on any theory." The complaint was dismissed.

### Ignition Man Excites Pennsylvania Town.

Edward Williams, who is described as the manager of the Superior Motor Specialty Co., of Philadelphia, is prospecting for a plant elsewhere. Last week he was in Carlisle, Pa., where the newspaper men and other inhabitants became considerably excited over the possibilities of a plant which "eventually may employ 2,500 men." The Industrial League, of Carlisle, has the company's proposal under consideration. At present, the Superior company is having a double ignition device produced for it under contract, but, while in Carlisle, Williams let it be known that the manufacture of a carburetter is in prospect, to say nothing of a car to which it will be applied.

### Nyberg's Receiver Applies for \$600.

Carl F. Morrow, receiver for the Nyberg Automobile Co., of Anderson, Ind., has filed his final report, showing that during his term of service he received a total of \$3,-451.25 and paid out \$2,947.74. The balance, \$503.51, together with all of the other Nyberg property, he has transferred to the trustee in bankruptcy. As his duties monopolized his entire time during the months of October and November, Morrow has asked \$600 as his remuneration.

### BRISCOE FORMS ALLIANCE WITH LEWISES OF JACKSON

Michigan Parts Makers to Produce Briscoe's Light Car-Sales to Be Handled from Four Different Cities.

Benjamin Briscoe's various visits to Michigan since his return from Europe with the light car which he developed over there are now fully explained. He, or rather the Briscoe Motor Co., has entered into a manufacturing arrangement with none other than the well-known Lewis interests of Jackson, Mich., who operate the spring, axle motor and forge companies bearing the name Lewis, and with these enormous facilities available, deliveries of the \$750 car are now promised for April.

The arrangement is a highly advantageous one and, although none of the Lewises are members of the Briscoe company, they practically will comprise its manufacturing department. The sales headquarters will be maintained at 7 East 42nd street, New York, and in addition sales offices will be established in Philadelphia, Chicago and San

Immediate energy will be centered on the production of the \$750 car, which, equipped with electric starter, will sell for \$900. The Briscoe cyclecar will be taken up after the larger vehicle is well on the market.

The Briscoe Motor Co., which was incorporated some weeks ago under the laws of Delaware, with an authorized capital of \$500,000, has completed organization by electing Benjamin Briscoe president, W. F. Smith, vice-president, and F. B. Dorman, secretary-treasurer. Smith and Dorman were associates of Briscoe in the Maxwell-Briscoe and United States Motor compa-

### No Pope Coreceivers in Connecticut.

Three receivers for the Pope Mfg. Co. may be necessary, or desirable, in Massachusetts, but in Connecticut one, and that one Colonel George Pope, is quite sufficient. This, in substance, is the opinion expressed by Judge Case, in the Connecticut Superior Court, in denying the modified application of the Massachusetts stockholders' protective committee and the banking crediters, who, after being denied two coreceivers in Connecticut, altered their demand and applied for the appointment of but one.

Judge Case declared that, although no question of Colonel Pope's personal fitness for the receivership had been suggested. and although he has received the approval of the Massachusetts court as competent,

the Massachusetts stockholders and in ers raised their objection upon the grag of his prior identification with the h company as one of its officers. The lanecticut court declined to share this a jection and stated that "fitness, so vai fied as to call for a conservator in the pe son of a coreceiver, is not a safe statur for the court to adopt." Accordingly let nied the application, leaving Colonel la in sole charge of the Hartford automobile plant, while control of the Pope biggs factory, located in Westfield, Mass., wilk shared by Colonel Pope and Charles ! Morss and Charles A. Persons as coreco-

#### Bill for Insurance Brings Judgment

Because the Jackson Eastern Distributes Inc., of New York City, failed to pay the insurance premium for which it had be billed, judgment was filed against it the week in the New York county clerk's one by Endicott Fiske, as assignee of the feleral Insurance Co. The policy, to core Jackson cars in New York, ran from Augus 14, 1911, to August 14, 1913. It original was held by the Jackson Motor Co. but was transferred to the Eastern Distributers Juuary 7, 1913. The judgment is for \$798.

### Quaker Secures South Carolina Support

The Victor Automobile Co., of Philadelphia, which grew out of a cyclecar devel oped by C. V. Stahl, of that city, has found financial sponsors and a plant in Greenville S. C., under the laws of which State it has been incorporated. Stahl with A. D. Dak and O. K. Mauldin, of Greenville, are the incorporators. It is their intention to turn out Victor cars in two sizes, at \$500 and \$550, respectively. They expect to have the plant in operation on or about the first of next month.

### American Taximeter Acquires Recordogni

The American Taximeter Co., of New York, has acquired the entire assets, including the merchandise, good-will and patents of the Delivery Supervision Co., of the same city, which last month ran into financial trouble. The Taximeter company's pur chase carries with it all rights to the Recordograf, which, so far as known, is the only instrument which records not merely speed and distance but time and stops, 25

Hodge Leaves Rims for Steering Wheels Karl Hodge, for the past six years general superintendent of the American Wood Rim Co., of Onaway, Mich., has resigned that Post to become production manager of the Tucker Wood Work Co., of Sidney, O. He will have full charge of the Tucker automobile steering wheel department.

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### 's stole **NCORPORÁTIONS**

Fuquay Springs, O.-Fuquay Motor Car lide Co., under Ohio laws; authorized capital, Vestie \$25,000.

Chicago, Ill.-Utility Motors Co., under LPer Delaware laws; authorized capital, \$100,-000: to manufacture motors.

Birmingham, Mich .- U. S. Truck Co., un-Brian; der Michigan laws; authorized capital, \$30,-000; to manufacture motor trucks.

Dallas, Tex.-Pullman Tire Co., under Texas laws; authorized capital, \$5,000. Corporators-R. S. Kayser, S. Zeve and S. W. Wexler.

Dallas. Tex.-United States Auto Supply Co., under Texas laws: authorized capital, \$5,000. Corporators-K S. Kayser, S. Zeve and S. W. Wexler.

Chicago, Ill.-Lucas Electrical Devices Co., under Illinois laws; authorized capital, \$10,000; to manufacture electrical machinery and appliances.

Appleton, Wis .- Frint Motor Car Co., under Wisconsin laws; authorized capital, \$5 .-000. Corporators-S. C. Shannon, H. F. Heckert and L. D. Frint.

Kansas City, Mo.-National City Motor Car Co., under Missouri laws; authorized capital, \$3,000. Corporators-H. F. Sundin, H. E. Hunt, and L. H. Gaskell.

Detroit, Mich.-Steel King Motor Car Co., under Michigan laws; authorized capital, \$100,000. Corporators—Edwin S. George and Samuel T. Crapple.

Ironton, Minn.-Ironton Motor Car Co., under Minnesota laws; authorized capital, \$50,000. Corporators-Primus D. Kreitter, Garfield Murphy and Carl Dundrea.

Nashville, Tenn .- Davis - Sparger Auto Co., under Tennessee laws; authorized capital, \$5,000. Corporators-Daniel Murray, Marion M. Cish and George L. Grant.

Detroit, Mich .- Ontario Motor Co., under Michigan laws; authorized capital, \$10,000; to manufacture motors. Corporators-E. F. Gerber, H. C. Baldwin and C. L. Mann.

Spokane, Wash.—Hawkins Motor Car Co., under Washington laws; authorized capital, \$25,000. Corporators-H. G. Hawkins, M. D. Hawkins and Richard Howard.

Seattle, Wash.-Waterhouse-Sands Motor Co., under Washington laws; authorized capital, \$100,000. Corporators - Frank Waterhouse, P. E. Sands and Joseph Waterhouse.

Groton, Conn .-- Mystic Motor Co., under Connecticut laws; authorized capital, \$1,-000. Corporators-Harry P. Mathews and Jacob D. Miller, both of Brooklyn, N. Y.; Harry Hoxie, Mystic,

Connersville, Ind. — Lexington - Howard Co., under Indiana laws; authorized capital, \$150,000; to manufacture motor driven vehicles. Corporators-E. W. Ansted, J. E. Huston and F. I. Barrows.

Davenport, Ia.—Interstate Automobile & Supply Co., under Iowa laws; authorized capital, \$25,000; to buy and sell motor cars and supplies. Corporators-F. A. Seeman, R. E. Bedee and others.

Cleveland, O.-Crotty Co., under Ohio laws; authorized capital, \$20,000; to operate a garage. Corporators-A. B. Crotty, A. L. McCannon, J. W. Leahy, George W. Hansen and R. V. L. Stanford.

St. Catherines, Ont .- Consumers Tire & Rubber Co., under Canadian laws; authorized capital, \$800,000; to manufacture rubber goods. Corporators-A. W. Marquis, W. M. Marquis and others.

Cairo, Ill.-Cairo Auto Sales Co., under Illinois laws; authorized capital, \$2,500; to manufacture, sell, rent and repair motor cars. Corporators-John P. Glynn, Joseph J. Glynn and Albert D. Teer.

Hagerstown, Ind.—Teetor-Hartley Motor Co., under Indiana laws; authorized capital, \$10,000; to conduct a general motor vehicle business. Corporators-J. H. Teetor, C. N. Teetor, Joseph Teetor and others.

New York, N. Y.-Wadsworth Auto Repair Shop, under New York laws; authorized capital, \$2,000. Corporators-John D. Flynn, George Beverly and James Farrell, of 74 Wadsworth avenue, New York.

Trenton, Mo.-Trenton Motor Car Co., under Missouri laws; authorized capital, \$10,000; to conduct a general motor vehicle business. Corporators-Julia L. Nugent, Julian L. Nugent and Albert F. Becker.

Chicago, Ill. - Klingelsmith Truck Co., under Illinois laws; authorized capital, \$350,000; to manufacture electric vehicles. Corporators-Joseph M. Klingelsmith, Michael F. Cure and Earle F. Tilley.

Chicago, Ill.—Stegman Motor Truck Co., under Illinois laws; authorized capital. \$10,-000; to manufacture, assemble and sell motor trucks, motor cars. etc. Corporators-

D. H. Burklan, R. C. Flodin and E. E. Burklan.

Kittery, Me.-Multi-Signal Co., under Maine laws; authorized capital, \$100,000; to manufacture and deal in electric signals and articles connected therewith. Corporators -H. Mitchell and H. A. Paul, both of Kit-

Augusta, Me.-Arrow Cycle Car Co., under Maine laws; authorized capital, \$500,000; to manufacture and sell motor cars and other motor vehicles, cyclecars, etc. Corporators-R. S. Buzzell and L. J. Coleman, both of Augusta.

Detroit, Mich.-Monarch Pattern Works. under Michigan laws; authorized capital, \$100,000; to manufacture wood and metal patterns and automobile accessories. Corporators-John P. Park, Edward J. Swink and Herbert J. Chandler.

New York, N. Y .- Wagner Sales Corporation, under New York laws; authorized capital, \$5,000; to deal in engine starters and other automobile devices. Corporators-Moses Morris, Joseph C. Eichenbaum and Albert F. Wagner, all of 150 Nassau street.

St. Louis, Mo .- Bittel-Leftwich Tire Service Co., under Missouri laws; authorized capital, \$25,000; to conduct a general automobile tire and accessory business. Corporators-C. G. Bittel, B. O. Leftwich, C. C. Guenther, H. E. Hagar and George J. Breaker.

New York, N. Y .- L. A. Van Patten, Inc., under New York laws; authorized capital, \$60,000; to conduct a general motor vehicle business. Corporators-Alfrieda G. Thaanum, 1500 Commonwealth avenue, Bronx; Frank Disch, 590 Van Ness avenue; Russell Goldman, 1190 Madison avenue.

New York, N. Y .- De Vere & Strang, under New York laws; authorized capital, \$10,000; to manufacture and deal in machine supplies, rubber, tires, etc. Corporators-Florence M. De Vere and Eugene L. De Vere, both of 263 Flatbush avenue, Brooklyn; Kathryn P. Strang and Fred M. Strang, both of Ocean Side, N. Y.

#### Change in Capitalization.

Detroit, Mich.-Long Mfg. Co., from \$300,000 to \$400,000.

Marion, Ind.-Western Motor Co., from \$400,000 to \$1,000.

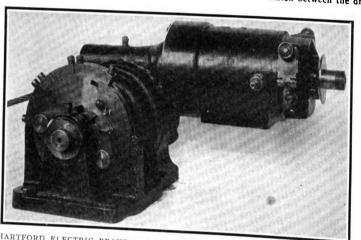
#### MOTOR WORLD

### **ELECTRIC BRAKE DEVELOPED** BY HARTFORD STARTER MAKER

Tiny Motor, Drum and Cable Take Place of Emergency Brake Lever -Radical Control Method-Applicable to Any Car.

To the lengthening list of uses to which electricity has been put in controlling the modern motor car-engine starting, lighting, gear shifting and signalling-there has been added the electric brake, which undoubtedly marks an era in construction, for nothing like it previously has appeared. It comes from a little suspected source-the

ing mechanism relies for operation. The motor is mounted on a suitable base and at one end of the armature shaft there is mounted an irreversible worm which operates in turn on a spiral gear mounted on a shaft running in anti-friction bearings and carried transversely to the armature shaft, in the case. At one end of the transverse shaft there is a drum-the arrangement being shown by the accompanying illustration-over which there is wound a steel cable directly connected to the brake actuating mechanism; the cable takes the place of the rod that usually connects the emergency brake lever with the brake actuating mechanism. In order to prevent the possibility of a broken cable, there is an adjustable friction clutch between the drunt



HARTFORD ELECTRIC BRAKE SHOWING MOTOR, DRUM AND CIRCUIT BREAKER

Hartford Suspension Co., of Jersey City, N. J., which, after a deal of experimentation, has brought to final perfection an electric braking mechanism designed to eliminate the time-honored and usual brake levers and thus to take out of the driver's list of duties the actual labor of applying brakes.

For the usual emergency brake control, the New Hartford system substitutes a tiny lever which is mounted beneath the steering wheel and through which the operator can obtain all the niceties of brake application from the sudden heavy strain to the gentlest touch by the simple expedient of moving his fingers without taking his hands from the steering wheel. Furthermore, the system is equally applicable to new cars and to old ones, is light in weight and can be easily put in place.

The system in the concrete reveals a number of the individualities of the already well-known Hartford electric engine starting system, which differs from all others in that it employs a very small motor operating at extremely high speed. It is upon a motor of this type that the electric brak-

and the worm gear; this clutch is adjusted to transmit sufficient power to obtain exactly the maximum braking effect desired; beyond this point, the clutch will slip, preserving the cable. The system can be made to operate with equal facility on either 6, 12 or 24 volt circuits and therefore is applicable to practically any car that is fitted with an electric lighting system, a storage battery being a necessary attribute to its operation, of course.

As might have been expected, the working out of a method of control incorporating positiveness of action and the application of the brakes with the varying degrees of strength required by normal operation of a car presented difficulties that were, almost literally, mountain high. But in bringing the system to its present form, E. V. Hartford, who is its inventor, not only surmounted the difficulties but in doing so revealed no little ingenuity, and, incidentally, a brand new electrical control. With the control, the electrical energy is so governed that the movement of the brake mechanism can be varied almost instantly, yet gradually, to any required degree, or in an

emergency the brake can be applied in a small fraction of a second.

Stops govern the position of the lever that controls the operation of the braking motor. When, in applying the brakes, the lever is moved into its first position, current is passed to the motor which rotates the drum and winds up the cable a predetermined amount when an automatic circuit breaker comes into operation and switches off the current; but as the worm gearing is irreversible the brake cannot release itself. The brake then is lightly applied 25 for ordinary stops.

To increase pressure on the brake, it is merely necessary to open and close the primary circuit again with the finger lever. The drum then is permitted to make a jurther revolution until the automatic circuit breaker again comes into play and disturbs the connection between the battery and the motor; to apply the brake still more strongly, the operation is repeated. Or, if an emergency stop is necessary, the brake can be applied full force by simply pushing the lever forward for the limit of its travel The application of the brake then is practically instantaneous.

Similarly, in releasing the brake, the release can be made almost instantly by simply moving the finger lever as far as it will go in the direction opposite to that in which it is moved to apply the brake. If a more gradual release is desired, this can be obtained by reversing the movements necessary to apply the brake, the lever being moved backward instead of forward. The backward movement of the lever reverses the tiny electric motor, thus permitting the cable to unwind off the drum and so to release the brake.

Still another feature of this new system which should commend itself to those who are naturally nervous is that a duplicate control can be placed in the tonneau of a car or within a limousine body where the stopping of the car, at least, can be placed under the control of those who ride in

### Ford Punctures Speedometer Story.

Up in Tarrytown, N. Y., the local newspaper has heard that the original Maxwell-Briscoe plant near that town "has been sold to Mr. Stewart, head of the well-known speedometer company, for \$150,000," and that "Mr. Ford, of the Ford Motor Co., will associate himself with Mr. Stewart in the manufacture of auto accessories." At the Maxwell Motor company's offices in New York, however, nothing is known of the reported sale of the property, and James Couzens, treasurer of the Ford Motor Co. vigorously denies that the Ford company has or will associate itself with Mr. Stewart or anyone else for any such purpose.



L. A. Van Patten, who has been connected with the trade in New York City for years, and who branched out for himself, as metropolitan distributer of Saxon cars, has opened salesrooms at 249-53 West 57th street and will place sub-dealers in his territory. Van Patten's latest previous connection was with Harry S. Houpt, Inc., the metropolitan distributer of Lozier cars.

E. F. Schoene Jr., has disposed of his interests in the Auto Lamp & Radiator Co., of Milwaukee; the new proprietors are: President, M. E. Kingsley; vice-president, S. Holny; secretary and treasurer, H. A. Gathmann. The company has a plant and offices at 186-88 5th street and is Wisconsin distributer of Guide lamps.

After having managed the Studebaker branches in Birmingham, Ala., and South Bend, Ind., O. C. Reed, a Studebaker veteran, has formed the O. C. Reed Motor Car Co. and has taken over the Studebaker business in the South Bend terrirtory; he retains the former Studebaker location and practically the same staff.

The La Crosse (Wis.) Motor Truck Co., capitalized at \$10,000, will establish a drayage and transfer service, starting with three trucks; the company will also conduct a garage and accessory business. The members of the concern are F. J. Noetzel and Herbert Lewis, of La Crosse, and W. H. Ristow, of West Salem.

The Fond du Lac Auto Co. has succeeded to the business of the Fond du Lac Auto & Tire Repair Co. located at 210-12 South Main street, Fond du Lac, Wis. The new company is owned by W. H. Collins and Harry Trelevan; the former owner is Rush H. Lee.

P. W. Stocum and Leslie K. Bronson, operating in Oshkosh, Wis., as the Stocum-Bronson Automobile Co., have severed relations; Stocum will continue the garage, repair-shop and salesrooms, while Bronson has returned to the newspaper business.

The E. A. Christiansen Co., of Sioux City, Ia., has taken over the business of the Interstate Auto Supply Co. The latter handles supplies, accessories, and Maxwell cars and operates a repair-shop; the location, at 609 Pierce street, will be retained.

Henry Deane Bourne and John Stone, of Manchester, N. H., have leased the Hanover Street Garage; they will add to the

equipment and will continue the business. They have secured the Chevrolet agency for Manchester and Nashua counties.

The Albany (N. Y.) branch of the International Motor Co. has been taken over by the Hamilton Truck Co., which, besides handling Mack and Saurer trucks, will operate a repair and service establishment; it is located at 294 Central avenue.

L. E. Conley, of Green Bay, Wis., and Earl C. Judd, of Kalamazoo, Mich., have formed the Conley-Judd Motor Co. and have located in the Express building, on Adams street, in Green Bay; they will handle Maxwells.

Edward Vogelsang, formerly connected with the Queen City Garage & Repair Co., in Cincinnati, O., has entered the trade for himself; he has formed the Lawrenceburg Garage & Repair Co., in Lawrenceburg, Ind.

W. J. Coughey, for five years connected with the sale of Studebakers in Atkinson, Kan., and St. Joseph, Mo., has opened a garage and salesrooms in Joplin, Mo. He will handle Studebakers exclusively.

A. G. Eberle, formerly of Newcastle, Ind., has established an automobile livery service in Anderson, in the same State; his headquarters are in the new Palace Garage on Meridian street, near 14th.

John Erion, of Rochester, N. Y., has secured permission to erect a garage, 66 x 70 feet and 21 feet; it will be of concrete and will stand on St. Paul street, between Mortimer and Andrews streets.

George Keinard, a wheelwright in Reading, Pa., is erecting a two-story garage, 20 x 42 feet; he will specialize in body work. His equipment includes a 550-gallon underground gasolene tank.

Nicholas Miller & Son, of Dodgeville, Wis., are erecting a garage and factory building; the factory will produce hay tools and light farm machinery. The garage includes salesrooms.

R. M. Dobson has formed the Crown Motors Co. in Chicago with offices, salesrooms and a service department at 1303-7 Jackson boulevard; he has the King and Richmond agencies.

The Guthrie (Okla.) Garage, located in the Crow building, on Harrison street, has been taken over by the Van Hoozer Gar-

age; M. Leavitt, of the former business, has retired from it.

Jesse Brabazon, formerly of Delevan, Wis., and formerly an aviator, has taken over the Beedle Automobile Co. in Beloit, Wis. The garage is located on Pleasant street.

The Hub City Vulcanizing & Repair Co., of Plymouth, Wis., has been purchased by James Peebles; George N. Putnam, the former owner, has not arranged his future plans.

H. E. De Leau, formerly manager of the Glenn County Garage in Willow, Cal., is to branch out for himself; he will open a garage in Germantown, in the same State.

Merrill Garage is the style under which Bert Nussle has entered the trade in Merrill, Wis. He is located in a garage building formerly occupied by Alfred Danielson.

William Smith and his son, Walter R., of Freeport, N. Y., are about to enter the trade; they are erecting a garage and will secure an automobile agency.

Fred Lambert, Charles Koschkee and Hiram Adams have entered the trade in Mt. Hope, Wis. They have formed a company to handle the Grant car.

Hunt & Magee have entered the trade in Glendora, Cal., under the style Central Garage; besides handling Reo cars, they will stock accessories.

Nathan M. Cory and Homer Stanley have entered the trade in Oskaloosa, Ia. They will conduct a garage and agency business on South 1st street.

John Thompson, of Irwin, Ia., has sold his garage to Jasper Groat; Groat will operate the garage as well as a store which he previously conducted.

E. G. Warner, of Los Angeles, plans to enter the trade in Anaheim, Cal. In the former city he is connected with the Moreland Auto Truck Co.

The Pedneau Garage & Machine Works, of Raleigh, N. C., plans to establish a garage and machine-shop business; it will locate on Elm street.

James Martin, proprietor of the Martin Garage in Frostburg. Md., has taken over the Frostburg Garage; he will consolidate the two businesses.

The Dealy Motor Co., of Sioux City, Ia.,

has taken the Jackson distribution for 57 Iowa counties; its salesrooms are located at 313 5th street.

The Hannan & Henry Motor Car Co. has been formed in Plattsburg, N. Y. It will operate a 'bus line in Franklin, Essex and Clinton counties.

The Kemco Electric Sales Co. has opened offices in Milwaukee at 454 Jackson street; it will distribute Kemco fan-type generators in Wisconsin.

The East Coast Auto Turning & Repair Shop is the style of a new business in Miami, Fla. Thomas & Merriman are the proprietors.

Charles A. Gage has purchased the Owego Garage, in Owego, N. Y. The former owners are F. S. Bloodgood and Frank Taylor

Hazen & Franks, of Philo, Ill., have purchased a livery stable and will transform it into a garage; they will handle Ford cars.

E. H. Palmer has opened a new garage and salesrooms in Charleston, S. C., at 57 Broad street; he will handle Lyons-Knight

Nelson H. Dickey, of Derry, N. H., has purchased the Dustin Motor Co.. located on Central street; he will continue the business.

Bertrand Owen, formerly of Whitewater, Wis., is about to enter the garage trade; he will locate in East Troy, in the same State.

The Iowa Cyclecar Co. has been formed in Des Moines, Ia., and has located at 1122 Locust street; it has the Falcon agency.

C. G. Webster and A. R. Smith have opened a garage in Paragould, Ark. It is located at 114-16 North Highland street.

The City Garage in Defiance, O., has been taken over by Bevard & Spar; the name will be changed to Overland Garage.

J. F. Straley, of Chicago, has secured permission to erect a new garage at 4400 North Clark street; it will cost \$10,000.

Louis Smith, formerly of Minneapolis, Kan., has opened salesrooms in Salina, in the same State; he handles Reos.

#### Recent Losses by Fire.

Ainsworth, Neb.-Syfort Garage; destroyed. Loss, \$15.000.

Porterville, Cal.-J. P. Holden, 628 Mill street; garage destroyed. Loss, \$2,000.

Shreveport, La.-O. K. Garage, S. R. Spencer, owner; damaged. Loss not stated.

Albany, Mo.-Albany Garage, W. G. Carmack and Dr. T. S. Bishop, owners; destroyed. Loss, \$30,000.

St. Louis, Mo.-Missouri Auto Specialty Co., 3961 Olive street; building and stock damaged. Loss, \$5,000.

### LASHER DISSIPATES DOUBTS **ABOUT WEED'S SALES POLICY**

Says All Sellers Now Act as Agents and Work Only on Commission-Outright Purchases No Longer Possible.

Editor Motor World:

The article which appeared in Motor World referring to the policy adopted by the Weed Chain Tire Grip Co. in the distribution of its patented products, is misleading in the extreme. So that no misunderstanding may arise as to the intent and purpose of this company in adopting such a policy, I beg leave to outline it briefly.

The Weed Chain Tire Grip Co. does not sell its patented products to any dealer or jobber, and authorizes no sale of its said products, except to an ultimate consumer for actual use. It has adopted a plan to definitely, positively and in good faith carry out the distribution of its patented merchandise upon that basis. It appoints territorial distributors who become, for the purpose, employes of this company, and which distributors are authorized within their districts to appoint sub-agents who may sell, as may the distributors, the products of the Weed Chain Tire Grip Co. to actual users.

Both the distributors and the sub-agents are paid for their work on a commission basis, in accordance with the results attained. Neither the distributors nor the sub-agents appointed by them purchase or acquire any property right in the product of the Weed Chain Tire Grip Co., which they may sell to users. Neither the distributors nor the sub-agents are authorized to sell the patented product of the Weed Chain Tire Grip Co. to any dealer in automobile accessories, or jobber, or other firm, corporation or person, for the purpose of resale. Neither the distributors nor the sub-agents appointed purchase or pay for the product they receive or distribute. They merely agree as agents and employes of the Weed Chain Tire Grip Co. to account to the company for the proceeds of all products sold

The distributer and the sub-agents are not allowed under the terms of their employment to fix the price under which the products of the company are to be sold, or to offer any merchandise or other thing to induce their sale. The products of the Weed Chain Tire Grip Co. are sold, therefore, by the company itself to the ultimate user on their own merits alone.

The reason for the adoption of this policy upon the part of the Weed Chain Tire Grip Co. is solely the desire upon the part of the

company to protect its customers, to preserve the market for its patented goods and the validity of its patents, and to give to its customers the entire benefit to be is rived from direct sale to them.

The statement in your article to the effect that the "sub-dealers buy grips," is a state . ment contrary to fact. Sub-agents appointed by a distributor are merely employe upon a commission basis, and never purchase or have any property right in the products of this company.

The statement that sub-agents also "pay for the chains they get" is contrary to fact They account to this company for the sales made to users.

The statement in the article referred to. to the effect that this company's contracts with distributors and sub-agents must be taken in connection with the license tag on the patented articles, licensing them for use, is not the fact; the license tag is to be taken entirely separate, distinct and apart from the contracts formulated by this company in the furtherance of its policy, as outlined above, for the distribution of its patented goods.

WEED CHAIN TIRE GRIP CO., By W. B. Lashar, President.

#### Minor Business Troubles.

W. H. Nichols, representing three banks of York, Pa., filed a petition in bankruptcy last week in Buffalo, N. Y., against the Kirkham Motor Mfg. Co., of Bath, N. Y. His claims total \$19,000. The equipment and factory of the company in Bath are estimated as worth \$35,000 and stand as collateral for about \$20,000 of bonds. The company manufactured motors.

Charging that 25 cars were removed in the night and stored in various garages. creditors filed a petition in bankruptcy last week against F. D. Homans, Inc., a dealer in automobiles at 239 West 56th street. New York City; the creditors and claims are: Jerome C. Kraus, \$306; Nathan M. Guinsburg. \$72, and Arthur W. Chatfield. \$350. It is alleged that preferential payments of \$4,000 have been made and that transferred merchandise and accounts are worth \$3,000. The assets are said to be: Cars. \$5,000; accounts, \$2,500.

Thomas A. Reilly, president, and Edwin P. Bernardi, secretary, have filed a petition in bankruptcy against the United Automobile Clearing House, of 324-26 West Court street, Cincinnati, O. The liabilities aggregate \$3,565.15, of which \$2,272.58 is secured; assets are \$2,053.62, consisting of four cars valued at \$1,100; accounts, \$688.62; furniture and fixtures, \$250; cash, \$15. The largest unsecured claims are: Reilly, \$500, note; J. H. Louis Carriage & Wagon Works, \$275: Standard Oil Co., \$228.26.



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#### FARMERS AND THE MOTOR CAR.

Accused of having affected the receipts of everyone and everything from chiropodists to railroad corporations, it has remained for the Hon. Frank Brown, one-time governor of Maryland, to charge that the automobile has rendered even the soil less fruitful.

Before Mr. Brown became a politician, he was a farmer, and it gives him great pain to observe that modern farmers are much given to the use of motor cars. As a result, he is convinced that they no longer work from sunup to sundown, or later, but are prone to cease work at three or four o'clock of an afternoon and take their families joy-riding, and, on occasion, to indulge in an entire holiday.

Mr. Brown saw evidence of the fact during a tour of Maryland, at the time of the Gettysburg celebration last summer. He actually found agricultural implements lying idle and not even a hired man in view. In fact, he fears that nowadays farmers are inclined to employ hired men instead of doing all the work themselves. This sort of thing, the one-time governor believes, is making the soil less productive, or, at any rate, is lessening its output and, according to his way of reckoning, is more or less responsible for Old Highcostofliving and for the temporary depression which now affects so many industries.

If even half of what Mr. Brown states is true, the country, far from being steeped in gloom, should congratulate itself; for of all men who live by the sweat of their brows the farmer is most sadly in need of relief and uplift, and if the motor car is serving that purpose it is doubly blessed. No man labors so hard, or so long, or, with his family, views the world through such a narrow groove. Usually not only are his hands horny but his back is bent with the weight of his toil. He is richly entitled to a holiday, and his family is richly entitled to all the joy-rides he can give them.

There is small fear that the soil will suffer. That view is merely the view of an alarmist. The farmer has had too little of the sweetness of life, has moved in too small a circle, and anything which adds to the sweetness of his life or broadens his vista, and permits him to rub elbows or touch tires with the world, means a broadening of his intellect, and anything that broadens intellects ultimately redounds to the welfare of the world. It makes better farmers, among other things.

The one-time governor of Maryland is talking with a dark Brown taste in his mouth.

#### "BEST SALES" AND BETTER SALESMEN.

Few purchases are made on the spur of the moment; certainly not many articles priced in the hundreds or thousands; tact, patience and persistency usually are necessary to effect such sales, and the perseverence must be of the tactful sort, the sort that does not make of itself a nuisance.

It goes without saying that knowledge of one's goods is an essential requirement of the successful salesman, but when all is said and done it is the little things that count in effecting the big sale and the small one. A chance word or a studied or unstudied act frequently tips the scales.

How true is this is well exemplified by the tour articles to which the judges of Motor World's Best Sale contest awarded the prizes, and which are reproduced elsewhere in this issue. The comparatively small things which effected these different sales should inspire every man who takes pride in his work. No man of the sort can really digest the articles without being the gainer thereby. It is from stories of such sales that most instruction can be gained.

Although their number has increased, and is increasing, the room and the need for competent salesment remains acute. The lack of them is the cry of almost every man who pays salaries. It is greatly to be feared, however, that the basic fault rests with the salary payer himself. It is too often his policy to engage a man and then to "turn him loose" to do what he will, for better or worse. Rarely does he do anything to develop or make greater the usefulness of his employes. He may find fault with or discharge them but the old order continues.

It may be that the real salesman is born, not made, but for all of that many men might be made uncommonly competent salesmen by a helpful word and some little intelligent oversight and direction. We make bold to say that no man can intelligently read Motor World without becoming a better salesman, that no more valuable or more convenient assistant is at the command of any man who pays salaries The assertion is not born of vainglory or self-interest; Motor World's pages speak for themselves.

# IMPORTERS' SALON TO HOLD CARS FROM EIGHT COUNTRIES

Two American Cars Mingled With Eleven Foreign Brands in Astor Ballroom—Tires and Accessory Exhibitor, Too.

The forthcoming national automobile show in Grand Central Palace will not be the only one in New York City during the week of January 2-10, for, as usual, there will be a display of foreign cars in the spacious ballroom of the Hotel Astor, where the annual Importers' Automobile Salon will be formally opened on January 2nd—one day ahead of the show in the Palace—and will hold the boards for just one week.

It is to be a very much more varied display, however, than it has been in years gone by, as, for the first time tires and accessories will mix with the cars, of which—breathe it softly—two will be American productions.

The complete list of exhibitors and the wares they will display is as follows:

Cars: Distributing and Importing Co., Bugatti, Mercedes and Marshall-Arter; Brewster & Co., Delauney-Belleville; De Dion Bouton Sales Co., De Dion Bouton; Isotta Fraschini Motor Sales Co., Isotta-Fraschini; Adams Lancia Co., Lancia; Benz Auto Import Co., Benz; Minerva Motors Co., Minerva; Peugeot Auto Import Co., Peugeot; Simplex Auto Co., Simplex; S. G. V. Co., S. G. V.; F. I. A. T., Fiat.

Bodies: The Holbrook Co.; Brewster & Co.

Tires: A. Faure, Faure tires; Gaulois Tire Co., Gaulois tires; Englebert Tire Co., Englebert tires; Coloumb Tire & Import Co., Prowodnik tires; Dunlop Tire Co., Dunlop tires; Dunlop Wire Wheel Corp., Dunlop detachable wire wheels.

Accessories: A. J. Picard & Co., Gray & Davis lamps and other supplies.

Of the 13 exhibitors of automobiles, two are American-made, Simplex and S. G. V., and although the list of foreign cars is only one name longer than it was last year, there are to be four foreign cars exhibited that were not show last year. These four are the Bugatti, the Delauney-Belleville, the Marshall-Arter, which is a British production, and the Peugeot, which, of course, comes from France. Germany and Belgium also are represented, the former by the Benz and the latter by the Minerva. And—delving into the list of tire exhibitors brings to light that Russia, too, is represented, its representative being the Prowod-nik tire.

As usual, no attempt will be made to add



Jan. 2-10, New York City—Importers' annual automobile Salon in Hotel Astor.

Jan. 3-10, New York City—Automobile Chamber of Commerce's national automobile show in Grand Central Palace.

Jan. 4-5-6-8, New York City—Annual winter meeting of the Society of Automobile Engineers.

Jan. 5-10, Los Angeles, Cal.—Show in Grand avenue Pavilion.

Jan. 7, New York City—Eleventh annual meeting of the Motor Accessory Manufacturers in the Waldorf-Astoria.

Jan. 7, New York City—Sixth annual banquet of the Motor & Accessory Manufacturers in the Waldorf-Astoria.

Jan. 8, New York City—Annual banquet of the Society of Automobile Engineers in Hotel Plaza.

Jan. 10-16, Milwaukee, Wis.—Milwaukee Automobile Dealers' Association's sixth annual automobile show in the Auditorium.

Jan. 10-17, Cleveland, Ohio—Cleveland Automobile Show Co.'s annual show in Euclid Square Exposition Hall.

Jan. 10-17, Philadelphia, Pa.—Philadelphia Trade Association's show in the Metropolitan building.

Jan. 12-17, Bridgeport, Conn.—Second annual show in the State Armory.

Jan. 19-24, Washington, D. C.—Automobile Dealers' Association's show in Convention Hall.

Jan. 20-24, Baltimore, Md.—Baltimore Automobile Dealers' Association's show in the Fifth Regiment Armory.

Jan. 24-31, Montreal, P. Q.—Montreal Automobile Trade Association's pleasure vehicle show.

Jan. 24-31, Rochester, N. Y.—Rochester Automobile Dealers' Association's annual show in Exposition Park.

Jan. 24-31, Chicago, III.—Automobile Chamber of Commerce's national automobile show in the Coliseum and First Regiment Armory.

Jan. 26-31, Scranton, Pa.—Automobile

Jan. 31-Feb. 7, Minneapolis, Minn.—Minneapolis Automobile Trade Association's

to the attractiveness of the Astor ballroom for it already is lavishly decorated and deeply carpeted and evenly warmed and perfectly lighted. Hence, there is little to seventh annual show in National  $G_{\mathbb{R}^n_\gamma}$  armory.

Feb. 2-7, Buffalo, N. Y.—Buffalo Agr. mobile Dealers' Association's pleasure velcle show.

Feb. 3-7, Montreal, P. Q.—Montra Automobile Trade Association's commerca vehicle show.

Feb. 3-7, Kalamazoo, Mich.—Kalamazoo, Automobile Dealers' Association's fifth anual show in the State Armory.

Feb. 4-7, St. Joseph, Mo.—St. Joseph to tomobile Show Association's Show.

Feb. 7-12, Seattle, Wash.—Annual shown the State Armory.

Feb. 7-14, Cincinnati, O.—Automobile Trade Association's show in Union Central Life Building.

Feb. 9-14, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's commercial vehicle show.

'Feb. 14-21, Pittsburgh, Pa.—Pittsburgh Automobile Show Association's fourth annual show.

Feb. 14-21, Pittsburgh, Pa.—Pittsburgh Automobile Show Association's show in Exposition Hall.

Feb. 16-21, Kansas City, Mo.—Annual show.

Feb. 16-21, Toronto, Ont.—Toronto Automobile Trade Association's 10th annual show in Transportation and Horticultural Buildings.

Feb. 21-28, Newark, N. J.—New Jersey Automobile Trade Co.'s show.

Feb. 21-March 4, Cincinnati, O.—Automobile Dealers' Association's show in the Music Hall.

Feb. 22-March 1, Hartford, Conn.—Automobile Dealers' Association's show in Park Casino.

Feb. 23-28, Omaha, Neb.—Omaha Automobile Show Association's annual show.

March 2, 3, 4, Cincinnati, O.—Automobile Dealers' Association's commercial vehicle show in Music Hall

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics' Building.

March 9-14, Des Moines, Ia.—Automobile Dealers' Association's annual show.

March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics Building.

do but to roll the cars into their allotted positions and switch on the lights. So when the doors are opened on Friday night the exhibition will be ready, without hitch.

### PALACE SHOW LIGHTS ALMOST READY TO BLAZE

# Much That is New Among the 350-odd Exhibitors To Be Revealed at "14th Annual" Though Few Surprises Not Uncovered by Motor World's Before Shows Issue Will Appear—Accessories Overflow.

When the 14th annual National automobile show of the Automobile Chamber of Commerce opens its doors on Saturday next—at 2 o'clock in the afternoon, by the way, instead of at 8 o'clock in the evening as in the past—in Grand Central Palace—having given Madison Square Garden the "go-by" for good and all—there will be much that is new spread out to draw the gaze of the curious.

What with no fewer than 18 brand new "sixes" and 14 "fours" that are just as new, there will be plenty to engage the attention of showgoers and perhaps not all of them will find time, before the doors are closed on the following Saturday night, to get around to blink their eyes and poke their fingers at the host of improvements and new wrinkles that will be revealed by models already well known in name, at least.

Names, in fact, are about all that will be well known; the cars that bear them have changed mightily in the year gone by. For remember: This is "The Year of Greatest Value"! There can be no doubt of it.

For example, glance over this list of "sixes"—"sixes" which for the most part carry name plates carried by "fours" that long since have demonstrated their worth: National, Chalmers, Oakland, Buick, Jeffery, Marion, Abbott-Detroit, Apperson, Hudson, Pathfinder, Henderson, Pullman—all of them names "familiar as household words." And not one of these new "sixes" sells for more than \$2,500; in fact, nearly half of them sell for less than \$2,000!

Is it "The Year of Greatest Value"?

Add to the list such names as Chandler, which is new to showgoers, for it has been born, so to speak, since the last show; Keeton and Vaughan, of which the same can be said, and Ohio and Marmon and Premier—the last three made prominent by years of service—and the list of 18 new "sixes" is complete.

Nor is all the newness in the six-cylinder class; consider the 14 new "fours"; incidentally, not a few of them are new in name as well as in fact. There are the Twombly, the Cornelian, the Voiturette, for instance, all of them cyclecars. Among the full-fledged cars, so to speak, there is the Vulcan, the Briscoe, the Partin-Palmer, the Allen, the McCord, all names that are new and that will be posted for the first

time at any show. Among the older or better known makers who have within the past year evolved new four-cylinder models to uncover at the show are Lozier and Moline-Knight, and Jeffery and Cameron and Lyons-Knight and Willys-Knight, the

NEW "SIXES"
which will make their first appearance at the NEW YORK SHOW

HUDSON ......\$1,750

HUDSON	<b>\$1,75</b> 0
CHANDLER	1,785
OAKLAND	1,785
CHALMERS	1,800
BUICK	1,985
оніо	1,985
MARION	2,150
ABBOTT-DETROIT	2,190
APPERSON	2,200
PATHFINDER	2,222
JEFFERY	2,250
HENDERSON	2,285
NATIONAL	2,375
PULLMAN	2,400
VAUGHAN	2,750
MARMON	3,250
KEETON	3,250
PREMIER	

#### NEW "FOURS"

.,_,,,	
TWOMBLY 3	95
CORNELIAN 4	25
VOITURETTE 5	20
VULCAN 8	50
BRISCOE 9	00
PARTIN-PALMER 9	75
CAMERON 1,2	00
ALLEN 1,3	95
JEFFERY 1,5	50
LOZIER 2,1	00
MOLINE-KNIGHT 2,4	00
LYONS-KNIGHT 2,9	00
WILLYS-KNIGHT	]
McCORD	1

latter being virtually a continuation of the Edwards-Knight, which made its first appearance at the last show. And last, but not least, there is a brand new electric pleasure car bearing the name of a maker

who heretofore has devoted his energies exclusively to the production of commercial vehicles—the Ward.

All told, the names of some 11 makers of gasolene cars who never have exhibited their wares at a New York show will adorn the markers in the Palace, the list including Allen, Apperson, Briscoe, Cameron, Chandler, Cornelian, Partin-Palmer, Twombly, Vulcan, Voiturette, and Vaughan. Among the makers of electric cars there are five who show their wares for the first time at a New York show; the list includes Baker, which appeared at the recent electrical show, however; Ohio, Rauch & Lang, Waverley, and Ward. Certainly, there is enough newness in all these new cars to make the conscientious showgoer footsore.

The Palace itself, where the cars-new and not so new-and accessories and other things are to be set out, has been carefully prepared for the function. No, the preparation has not been elaborate-or, rather, the decorations are not elaborate. For as nearly everyone knows, the Palace scarcely needs anything elaborate in the way of decorations. Madison Square Garden, of course, is something else again. There, those who have things in hand have much to contend with. The poor old Garden must be practically built over every time it is used for an automobile show and, of course, the operation leaves plenty of room for decorative artists to exercise their ingenuity.

But in the Palace the ceilings are high and everything is practically new-at least, most of the newness has not yet had time to wear off-and the grand marble staircase of itself helps lend the air of beauty that those who have decorated the Garden in the past have sought so hard to obtain. There will be a little embellishment, of course, but there will not be much. Mostly, it will be filmy draperies that will hide bare windows and walls and help blend the great columns into the perspective. Flowers and other greenery, spread with a not too lavish hand, will help conceal more or less unsightly necessaries and under each window there is to be a great box of flowering plants. In all, four floors will be used, cars being on all of them, though mostly on the first two, with accessories on the three upper floors.

All told, there will be some 350 separate exhibits disposed about the four floors of

CHARLES CLIFTON

### CHAMBER OF COMMERCE SHOW COMMITTEE AND THE SHOW MANAGER

the Palace, and of them 83 will be the exhibits of car makers, 254 will be the exhibits of accessory makers, the remainder being given over to the makers of motorcycles. What a contract between the forthcoming show and the first one, which was held in



Madison Square Garden during the week of Nov. 3-10, 1900! This was the first real show, for though a few automobiles were exhibited at bicycle shows in New York and Chicago in both 1898 and 1899, the first genuine automobile show did not come until later. At that first show there were 31 exhibitors of cars and 20 exhibitors of accessories!

At the second show, which was held the following year, there were 93 exhibitors, as compared with 51 for the preceding year, and from that small beginning the number has climbed until at the last show, which was held in both Madison Square Garden and Grand Central Palace and ran for two weeks, the first week being devoted to pleasure cars and the second week to commercial vehicles, there were 93 exhibitors of pleasure cars and 372 exhibits of accessories during the first week; during the second week, most of the accessory exhibitors remained, and the place of the pleasure cars exhibitors was taken by 66 exhibits of commercial vehicles.

As to what the show will contain in the abstract or the concrete and also in detail, all that already has been told in Motor World's Before Shows Issue, which bore date of December 18th. Still, it is practically certain that it will hold more beside, for as always has been the case, there are some makers of cars, and of accessories, too, who cannot resist the temptation to "hold back"

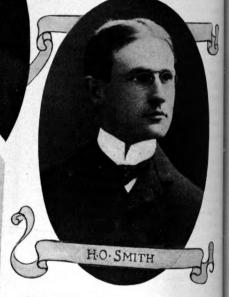
and spring surprises held up commodious sleeves.

S.A. MILES

Despite that fact, however, the show scarcely can do more than to emphasize the trends and the tendencies that were pointed out in the Before Shows Issue of Motor World. Such tendencies are well defined; they are real and they are general, and for this reason they cannot easily be overlooked by any one who has even half an eye.

Take the tendency toward streamline bodies, for instance. There is scarcely a manufacturer who has not attempted to build into his new bodies the lines that serve to give the type its name. Some makers, like the National and the Pullman and a few others, have been more than ordinarily successful in emulating the entering wedge principle; and even though it may require a stretch of the imagination to connect the term streamline with the bodies to which it has been applied by some others, the clearing away of external equipment, the smoothing and the refining that everywhere is apparent is very real.

No longer do such innocent, and at the time highly desirable, adjuncts as side langs find a place on a great many cars, and maning boards, which long ago gave indication of the coming clean sweep, at last have been swept clean. All these things—little



ones, some of them—are the things that serve to make the new crop of cars different from their predecessors. The veritable landslide to left steering with center control is almost enough to do that by itself, and this in conjunction with other things such as moulded fenders, concaved skutles, rear and cowl fuel tanks, rear tire carriers, lowered chassis in general, and the wider, U-shaped doors that are becoming so general, make for differences that are more than ordinarily plain.

Equipment, which last year fairly bounded into prominence and became one of the principal talking points of not a few makers who hitherto had not been able to talk about it at all, this year is more prominent than ever. This is particularly true of electrical equipment. Practically without exception cars now are sent away from the factory with electric lighting and engine starting systems, and a sufficient number of makers to give prominence to the movement have added, as well, electric gear shifters.

Among the makers who have removed their gear shift levers and placed them, along with the starting crank, in the tool Norwalk; all of them now have thoroughly ists indeed who can resist the temptation goes with shifting gears with one finger

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i a row of buttons atop the steering colin-but the apparatus will be there to .. Pneumatic gear shifting is quite as y as electric gear shifting, though it n't be as numerous; McFarlan is the ly car that has adopted it as yet. In the ilm of electric equipment, the Hartford spension Co. will reveal something that startlingly new-an electrically opered emergency brake-and though it has t been announced as standard equipment any one, it will be at the show in perted form and it serves to emphasize more ongly than ever the leaning toward the ostitution of electrical means for obtainthe results heretofore obtained only by iscular exertion.

Among the new cars themselves—the cars at would have been real surprises if it had t been for the information spread by Mo-· World's Before Shows Issue-the new tional "six" undoubtedly will attract its I share of attention, for aside from bethe first six-cylinder product of a maker 10 has never produced anything but fourlinder models in the past-and made an commonly good record in doing it, too the car incorporates to a greater degree an does any other, perhaps, the tendencies at all of them combined bring to light. ie thoroughness with which the streame principle of body building has been ibraced already has been remarked. eper down in the vitals of the car, the gine, which has cylinders measuring 334 51/2 inches, helps make plain the trend ward smaller bores and higher piston eeds; again, the cylinders are cast in a gle block, as are the cylinders of a good oportion of all the other new "sixes." the way through the car, clear back to : rear springs, which are of the cantier type, the construction may be used as apt example of the up-to-date methods t serve to distinguish the car of 1913 m the car of 1914.

The Thos. B. Jeffery Co., whose products been rechristened Jeffery, after having long borne the name Rambler, is another that has come out boldly in favor the small-bore, high-speed motor, both new "four" and the newer "six" being this type. And the same can be said of whole lot of other makers who will unter new models—Chandler, Vulcan, Oakd, Cartercar, White, Auburn, Velie, Abt-Detroit, Pullman, Marion, Moon, Imial, Apperson; the list is a long one and goes to make plain that the small-bore h-speed motor is gaining in favor by 35 and bounds.

of really new motors—motors, that is, tembody construction decidedly out of ordinary—there are not very many; the sational Premier-Weidely motor and the Moline-Knight are the only ones,

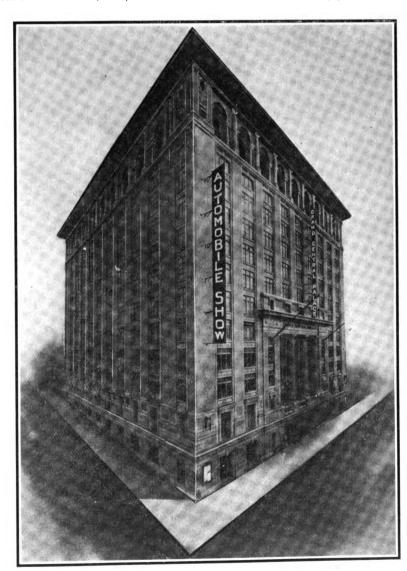
though there is enough newness in these two alone to hold the attention of any ordinary mortal for more than a few minutes.

Of the two, the Weidely motor probably is the newer, though the Moline-Knight will give it a close rub. The Weidely is new from end to end and from top to bottom; there is scarcely a thing in it that can be called old except the principle upon which. it operates. The cylinders are cast in a block, but it is an unusually compact block with only about four external parts-namely, the intake manifold, the fan bracket, the carburetter, and the magneto. Valves are up in the head, but here, too, the construction is brand new, for the method of actuation is like nothing else of its kind. A single camshaft serves to open and close all 12 of them, and there is an ingenious finger mechanism which takes all the side strain from the valve stems; also, the valves are

water-cooled, and for the first time the stems are positively lubricated. Incidentally, the cylinder head is detachable, there are no water pipes—not even one to the radiator—the fan has only two blades, the pistons have only two rings, the crankcase and cylinders are all one piece—the whole motor, in fact, fairly radiates newness, and it must be seen to be appreciated.

The Moline-Knight motor is scarcely less new, for though it relies upon the accepted type of sliding cylindrical sleeves for operation, very nearly everything in the construction has been done in a new way. For instance, the four cylinders are in a block and it is the first time this has been done with a Knight engine; also, there is no water pump, the water being circulated by thermo-siphonic action, and this, too, marks an era in Knight motor construc-

Continued on page 29.)



GRAND CENTRAL PALACE, WHICH WILL HOUSE THE SHOW



### **HOW TO SUCCEED IN 6 MONTHS**

What Any Retailer Can and Should Do if
He Would Win—Analyze His Business and Market — Personality
and Receptive Mind.

The ideal dealer is not an impossibility or a dream. He is a real man, doing business with the utmost efficiency. He already is a practical fact and a potent force in the business—and as men and methods advance he will be still more in evidence. For, as time goes on, business of whatever sort—if it be legitimate—shows a corresponding growth toward higher standards—greater efficiency.

The ideal dealer must make money—therefore he must know that he is making it. He is making money not by accident but by design—making it because he has analyzed his business, his market and his methods and fits his stocks and his selling methods to the market which he desires to conquer.

#### Defining, Then Capturing the Market.

He hesitates at nothing that will help his business grow. He does not sit in a corner of his shop and think that the occasional passers-by and the occasional comers-in constitute his entire market.

If the ideal dealer be selling tires and supplies he can very quickly determine how large is the area of his market—or how small—and with that knowledge in his possession he is able to estimate in advance to a large degree—whether or not his business may be profitable. Note the word "may" is emphasized, for the size of the market has nothing to do with whether it will be a profitable business or not. That is only one element, and important though it is, it is subservient to the personality and methods of the dealer who seeks to make that market his own.

So the ideal dealer seeks for facts about

his market; he knows how many cars and what kind are in his neighborhood—and gradually learns what the transient business amounts to—but, he is all the time enlarging the area of his efforts—and spreading his reputation by means of printed circulars and letters and cards that tell something about his business and his desire to give honest service with an honest line of goods.

There is no rush in response to this sort of work, but a constant adding here and there of a customer whom he did not know about before and whom he gradually learns has become a customer through the combined results of his reputation for service, his direct advertising and perhaps his window displays.

#### Personality a Force in Business.

The ideal dealer realizes that his personality is a force in business-therefore he seeks to develop it. He wants to know more about business and business methods-and what this modern thing called efficiency is. What it can do for him. He hears much about merchandising methods; he wants to know exactly what they are; his mind is open; maybe someone else has some good ideas; perhaps those ideas will fit his business and make him some more money. It costs money to try them-as it always does cost money to grow and expand-but he realizes that he must pay the price if he is to have a look in, and he antes up with cheerfulness.

### Mind Ever Receptive for Good Ideas.

Here, perhaps, is an advertising manager who writes him that he has a plan that will increase his business; perhaps it will. What is the plan? He wants to know. He doesn't say, "Oh, what does that big stiff know about my business—he never ran a store in his life." Instead, he sends for the plan, determined to try it if it looks at all good.

And when the Ideal Dealer gets a plan

he does not short-circuit it by putting only part of it into execution. He faithfully carries out the entire program to the last detail and thus gives the plan a chance in work out. In connection with his sales deforts he considers and uses such communitate to the considers are used to such communitate to the place matters as window display, stort cleanliness, prompt service, courteous treatment, fair prices, show cases, stock arrangement, advertising posters, hangers booklets, etc—and makes them all part of the plan by which he irresistibly more onward to success.

### WHEREIN THE DEALER AND GARDENER ARE NOT UNLIKE

The gardener protects his plants in witer. How are you caring for your propects? You have planted the seed and so a slight growth started, and now the old weather is here. Are you forgetting the little growths here and there, leaving the unprotected so that they will freeze and shrivel up? Or are you carefully culting them and watching them with solid ous care, so that they will mature into orders?

#### Effectiveness of Work in Winter.

It's largely a matter of looking after them. And it is just as easy to develop growth in the winter as in the summer All it needs is attention and a consciousness of what you are doing.

Right here it is pertinent to remark the winter seasor, is gradually becoming just as important a part of the year as at other time in the volume of sales. It depends on how much work you do allow the sales opportunities. If you think abelieve in the sales-making opportunities and look for them, you can't help but missales. If you "don't believe there is at thing doing" you won't make sales. So, a big measure, your success rests with your and you alone.



### IDEALS OF THE IDEAL DEALER

Businesslike, Common-Sense Methods That
Made Garage and Tire Concern's
Quarters Too Small—Service,
But With a Profit.

The Tire & Auto Service Co., of 2310 Woodward avenue, Detroit, moved into its new garage and tire and accessory sales-rooms just about six months ago. And already its owners are planning the erection of an additional building that will give them exactly 100 per cent. more space for the storage of cars.

Their growth is not due to accident or location. Location has helped. But above everything else, it is their business-like methods. They are in business for a profit. If they cannot sell goods at a profit they do not want to sell them. And they do not hesitate to explain this to their customers in the frankest and friendliest sort of way, which invariably makes the sale and sends the customer away with a keen appreciation of the fact that they are in business to give service—and to make money.

#### Profitless Service Is Unsatisfactory.

Both ideas are closely related. For many have found to their amazement that the man who gives service and does not make money is pretty soon without the opportunity for giving service or making money. And it is not trite to say that most men prefer to patronize a money-maker to a money-loser.

The Tire & Auto Service people give service with their tires. That is, they will change a tire or deliver it at your house or office or anywhere on the road you may happen to be within a reasonable distance.

But they do something else, too. They garage over 45 cars and are paid in advance for so doing. They pay their rent in advance. House rent is always paid in advance. Why should their customers not pay in advance? That is what they rea-

soned and it did not take much talking to convince their customers. They do "charge up" gasolene and supplies, however. That means they get that end of their customer's business as well as the garaging, which is not always true of all garages.

They make no exceptions to this rule of rent in advance—and it must be paid by the 10th of the month. Other garages do not insist on it, and yet the Tire & Auto Service Co. gets all the business it can handle and is growing? Why?

#### Common-Sense Methods That Pay Well.

They tell a man exactly what they will do for him for the rent he pays—and they do it. They also tell him what they expect from him, and that avoids misunderstandings. They are "on the job" day and night. They keep their garage so clean that "you could almost eat off the floor," as one enthusiastic customer expressed it. Just simple common-sense things, of course. Most anybody with as much common sense could do them. Yes, that is all. And it is usually what is behind and back of every sort of success.

### TEACHING VALUES AND THE PART CONVICTION PLAYS

A salesman is a teacher of values. To teach values he must know them. And to be really successful he must believe in the values he is teaching. In other words, if the value is only 50 per cent. or 75 per cent. and he knows it, he can never be a really great salesman. He might better quit. Because before everything else his teaching must be honest to be convincing and that means 100 per cent. conviction.

You cannot communicate to the other fellow something you haven't got yourself. You can get words across, to be sure, but back of the words is that indefinable something that is communicated like a wireless message; it is a wordless message, but it is more real and more effective than words and it goes direct to the buyer's soul. It can't be sidetracked or explained. If the 100 per cent. honesty and conviction is there, it gets across often in spite of words rather than because of them.

#### GETTING THE SELLING HABIT;

#### SALES LEADING TO MORE SALES

"Success prompts men to exertion and habit facilitates success," says one of the world's greatest thinkers.

Think it over and see if it does not coincide exactly with your own experience.

The habit of being on the job makes it easy to be on the job. The habit of making sales—and following them up until they are made—excites you to make other sales. Each sale unconsciously suggests to your mind someone else that could be sold. Get the habit. It will make you a winner. It will facilitate your success.

#### Gold from the Highways and Byways.

The Ford dealer in Sudbury, Ont., evidently believes in advertising. Ford street car placards were seen in several places that had not the remotest connection with automobiles. One of these places was a restaurant, where everyone who ate could become imbued with the virtues of Ford cars. Sudbury is a town of about 6,000 inhabitants and there are no street cars; nevertheless, the street car signs are being used to good advantage. It is quite evident that the Ford dealer is not missing many good bets.

#### Backing Service Talk with Service.

Be careful that what you say in your advertising about your service is backed up by your service. Talk without making good is cheap for the customer and costly for you. The best thing any customer can say about your service is that it is even better than your advertising.

### NO HITCH IN PERFORMANCE OF MOLINE-KNIGHT MOTOR

Running Strong After 11 Days—Power Averages 80 Per Cent. More
Than Rating and Varies Only
With Barometer.

Running smoothly and rhythmically, with a monotonous hum and an absence of any semblance of rattle or pound that denotes a highly satisfactory condition of bearings and wearing surface, the Moline-Knight four-cylinder motor that commenced its test on Friday evening, December 19, completed its 11th day's work at 7:01 o'clock Tuesday evening, December 30. Not only has the motor run continuously and without falling off of speed or power, but it has no blemish of any kind on its record, and there is nothing to indicate that it will not finish the proposed 336 hours' run without a hitch.

As stated in Motor World for December 25 last, in referring to the commencement of the test run, the cylinder dimentions of 4 x 6 inches give a formula rating of 22.6 horsepower to the motor. Throughout the test, however, the motor, running always at 1,100 revolutions per minute, has averaged between 38 and 39 horsepower. The minimum power so far has been 37 horsepower and the maximum 45. In explanation of the causes of power variation an exceedingly interesting fact is brought out.

While a little fluctuation is ascribed to the slightly varying quality of the gasolene supplied to the motor, it has been found that by far the greater part of the undulation in the power curve has been due to atmospheric conditions. In proof of this, it is explained that barometer readings have been taken regularly at one-hour intervals, and the power curve has been found to follow the barometer exactly. When the barometer rose, the power increased. and when the barometer fell, down went the power curve. So closely have the curves followed each other that the barometer readings will give the horsepower almost to a dot. An inch on the barometer scale corresponds to from 1.25 to 1.33 horse Dower.

The completion of the 11th day means that the motor has run for 264 hours and has made 290,400 revolutions, during which the Bosch magneto has generated current for 580,800 sparks which the Bosch heavy-duty plugs have produced unfailingly. Not an explosion has been missed, and there has been no occasion to so much as change a plug. The endurance and reliability of the plugs is backed by the fact that they

are so located as to be completely waterjacketed and well cooled, so that they work under excellent conditions. This particular point is one that has been given special consideration in the design of the motor.

At the rate at which the motor is running, it is said to be exerting the power required to propel a touring car at the rate of 45 miles an hour. A car running 45 miles an hour for 11 days would cover 11,-880 miles, which is equivalent to very nearly six round trips between New York and Chicago, or the biggest part of two round trips between New York and San Francisco.

If the imaginary car were running up an 8 per cent. grade with its complement of five passengers it would cover the ground at the rate of 27 miles an hour, making a total distance during the 11 days of 7,128 miles running up hill all the time.

Although it has not been decided just what will be done at the conclusion of the official test under the eye of Herbert Chase of the A. C. A. laboratory, it is possible that the motor may be permitted to run for a further endurance record, or that it may be stopped and the carburetter adjusted for tests of fuel consumption. At present the carburetter has been allowed to run on what may be termed a "stock" adjustment, being set for average running, about as it would be set if the motor were installed in a car and without any particular striving after fuel economy.

### Iowa College to Instruct Car Owners.

In order that the car owners in the State of Iowa—said to be one to every 35 of the population—may learn more about the "insides" of their cars, the Iowa State College has added an automobile institute to its engineering extension. It will be conducted five days in practically every town in the State where there is a demand for expert instruction in this field.

R. E. Davis, formerly chief engineer at the Midland factory and before that connected with the Packard, F. A. L., and Marmon companies, has been selected to head the department; it is intended to aid the car owner in making many of his own repairs and in taking care of his car.

Gets Ten Years for Stealing Automobile.

W. Edward Robinson, of Pomona, Cal., won't steal another automobile for some time. Having been convicted in the Superior Court in Los Angeles of stealing a car belonging to C. H. Bingham, of Alhambra, he was sent to the San Quentin penitentiary for ten years by Judge Willis, who stated that he intends to make car stealing a decidedly unpopular pastime in his jurisdiction. Robinson removed the number and attempted to disguise the car and avoid

### WHAT'S THE DEFINITION OF COMMERCIAL MOTOR VEHICLE

Automobile Chamber of Comment Asks Itself and Answers the Question—Half-way Class That's Neither One Nor T'other.

What is a commercial motor vehicle? The question may seem a strange one at this time, when commercial vehicles are carrying so much merchandise, and doing it so well—to say nothing of the fact that their numbers are increasing apace. Yet the question has arisen and, curiously enough, it is the pleasure car that is responsible for the asking of it.

The inquiry has its origin in the fact that at the forthcoming shows in New York and Chicago there are to be no commercial vehicles. Such being the case, it follows that in order to exclude commercial motor vehicles it must be known just what commercial motor vehicles are.

There has been some doubt as to whether certain types of motor vehicles should be classified as commercial vehicles or not. For example, the taxicab may be used either s a private town car or for hire as a public conveyance; so may the station wagon and the motor stage. Many persons do not rank motor fire apparatus as motor trucks or commercial vehicles because it does not carry merchandise. The funeral car is another vehicle that occupies an uncertain position. There are also special service machines, such as emergency wagons, tower wagons, and fire chiefs' cars, that seem to constitute an intermediate class between the pleasure or passenger car and the commercial vehicle.

The need for a clear-cut definition of a commercial motor vehicle was therefore considered at the last meeting of the commercial vehicle committee of the Automobile Chamber of Commerce, with the result that this one was recommended to the board of directors.

"A commercial motor vehicle is a sellpropelled vehicle designed to be operated without rails for the primary purpose of transporting materials, products, passengers or apparatus especially for business purposes or for hire, profit, emergency work or special utility service as distinguished from private personal use by the owner or renter for enjoyment or convenience."

It is pointed out that touring cars that have been converted to commercial uses by reconstruction are not included in the definition, which takes cognizance of the original intent of the design, although such converted cars may be registered as commercial vehicles by the secretaries of State.

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### THE FOUR "BEST SALES" AND MEN WHO MADE THEM

Judges Select the Winners of Motor World's Instructive Competition—Boston Salesman Receives First Award, Kansas Dealer the Second—High Valuation Placed on Confidence in One's Own Goods.

Three competent judges, M. J. Budlong, president of the Packard Motor Car Co., of New York; J. Elmer Pratt, sales manager of the Pierce-Arrow Motor Car Co., and W. A. Ryan, acting sales manager of the Ford Motor Co., found it no easy task to decide which were the best four sales of the many that were submitted in competition for Motor World's cash prizes.

Messrs. Budlong and Pratt readily agreed that C. W. Cole, of Boston, Mass., and R. E. Curtis, of Lincoln, Kan., were entitled to first and second awards, respectively, and although Mr. Ryan was not in agreement with their choices, reconciliation of the opinions made possible the following awards:

First award, \$30: C. W. Cole, Boston, Mass. Second award, \$20: R. E. Curtis, Lincoln, Kan. Third award, \$15: W. R. Alexander, Indianapolis, Ind. Fourth award, \$10: Frank Raldenis, Omaha, Neb.

In selecting Cole for first honors, Mr. Pratt remarked that he had "shown very clearly the value of confidence in salesmen which, to my notion, spells 'Salesmanship' more than anything else," a sentiment with which Mr. Budlong was in accord. Considering Curtis's sale "an excellent one," Mr. Budlong observed that the only criticism to be offered is that Curtis was not quick enough to present his argument of substituting a cheaper tube before his customer left the store; he was taking a long chance in losing him altogether, but the fact remains that he made the sale.

Mr. Budlong considers that Alexander used good judgment and did excellent work in holding a customer, but points out that he did not actually make the sale.

Raldenis—a nom de plume—is characterized as having been "extremely keen and alert in sizing up his customer," the "persistency with which he followed him up being particularly good."

Of the men selected for the awards, Cole is a salesman attached to the Cadillac agency in Boston, Curtis handles Ford cars on his own account in Lincoln, Kan., while Alexander is a Henderson salesman in Indianapolis.

Of the other contenders, Robert C. Crowthers, of Cincinnati, and C. C. Hall, of Danville, Ill., are singled out for remark by two of the three judges.

First Award—C. W. COLE, Boston, Mass.

I learned that Mr. ——, of Boston, was in a position to buy an automobile and that if the right man came along and influenced him into the thought, he could be sold a car. I paid him a visit at his home one evening and talked along the line of the comfort he and his family would derive in the use of a car. He seemed somewhat interested before I left him, and he told me that he would think about it and advise me

I did not hear from him for three days, so I made it a point by accident to call at his office. He informed me that he had talked to a friend who owns another make of car and had promised him to take him for a demonstration in it that afternoon. He took the demonstration and, of course, was more or less pleased, for his friend was a strong booster for that car and called his attention to the excellent features the car possessed.

The demonstration caused several motor car salesmen to get on my prospect's trail, and then the fun started. I made it a point to try to get in touch with him every day, but he refused to give me an audience until he had heard the other salesmen's



C. W. COLE

stories. After waiting a day or two, I paid him another visit at his home and got a rather chilly reception; he claimed he had practically concluded to buy a car of another make. I did not stop here, but put on more steam than ever, though I never said anything about any other car.

I succeeded in getting the whole family out for a short ride that very night, and upon our return home I accompanied them into the house. We all joined in the talk and, of course, all kinds of arguments and criticisms were thrown at me, but I had

the goods and believed in them, and just put forth every effort to show them where our car was superior to any other car on the market for anywhere near the price; I dwelt on the subject of unexcelled long life and service, and our ability to furnish parts for any of the cars we have ever built.

The evening soon passed, and it was filled completely with talk on our car alone. I gradually learned the equipment that Mr. - would have on his car if he were to buy one, and I filled in the order blank as we went along. I footed it up and found it amounted to \$2,225. I passed it over to Mr. ----, he looked it over carefully, and I kept right on feeding the ideas of confidence in our car to him and sidestepping all questions he put to me regarding other makes as best I could, and at 12:15 A. M. he finally signed the order. In so doing he said, "I am going to be frank with you; I am giving you the order not only because you have won my confidence, but I have carefully noted in every talk I have had with you that you have never said an unkind thing about any other make of car, but have worked wholly and solely on your

#### Second Award-R. E. CURTIS, Lincoln, Kan.

Although it seems to me that my sales are easily made, since I keep at the prospects from time to time until I have finally landed them, there is one sale which I made a short time ago which impresses me as being my best because I made it after the prospect had become angry and left the salesrooms.

I had been working on this prospect for some time, but we could not agree as to price; he had gotten cut prices from two other dealers, and I believe his principal desire in getting me to cut was to have the satisfaction of fixing the price on what he was going to buy. I finally convinced him that I could not reduce my price, as the company which makes the car had set it low in the first place and did not allow us to alter it.

Although he was convinced that I was right in refusing to cut the price, that



R. E. CURTIS

didn't end it. He then wanted me to throw in a couple of tubes for \$5 extra, whereas I had told him the tubes were \$8.50. I refused to do so, whereupon he became about half angry and walked out and down the street.

That set me to thinking, and I picked up

my order book and started out aiter him.

When I caught up with him I said, "Do you know that if I wanted to I could have given you a couple of cheap tubes that don't cost half what the ordinary tubes cost and you wouldn't have known the difference?"

"I hadn't thought of that; I guess you're right," he replied.

At the same time I was writing up the order, and as soon as I got through he said to me:

"Let's see that order, anyhow." As he looked it over I sharpened a pencil and handed it to him. He took it and signed up, saying, "I guess you might as well get one ready for me. I believe you are square and will treat me right. I'll have to give you credit for it, since you wouldn't take advantage of me on those tubes."

### Third Award-W. R. ALEXANDER, Indianapolis, Ind.

One of the other boys had sold himwe had his order and a \$250 deposit. I suppose you wonder how I figure I had any just cause to be proud of the sale. So far, I didn't.

It was a special order all the way through —special whipcord upholstery, special painting, including trim sticks and instrument board. The special features went down to fine points like binding on the cushions. Believe me when I say the company didn't thank the salesman for that order, for it came in the middle of the busy season. However, the order was accepted and starred through. Delivery had been promised in two weeks.

You all know how a fellow just drops in to see "how his car is coming along." Well. we began to see more of our new customer in about ten days. We assured him it would be along shortly. Two weeks went bythree-four-five,-six, and ten times as many promises to the buyer. Say! we used to leave the office by the back door and go down side streets to avoid meeting him. As time wore on, he wouldn't have anything to do with the young man who had taken his order, and then he "wished himself on me." I had no argument in my favor. I could only admit he had a "kick coming" and agree with him in everything he said, as I have found that is sometimes the best "first aid to the injured" and then await develop-

He had figured on a tour in his new car—some 1,500 miles. It would have been the sixth week after he placed his order, and as the special parts were beginning to arrive then he put the trip off for a week. He was going to start Saturday, but it being a

special car, some things weren't right. More delay! You can imagine the buyer's disappointment and disgust by the first of the following week.

I didn't see him for a couple of days; I knew something was happening, but I couldn't get a line on him. The car was finished—final tested and ready to deliver—but no man.

The next morning he was down bright and early. I was able to meet him with the first "real" smile I had ever given him, for I knew this was the end—the car was ready. He didn't return my smile, but I had gotten used to that several weeks before so didn't think anything especially wrong; but when he said he had bought another car and was leaving that afternoon I knew it was time to get busy.

I had sold lots of cars—easy sales and hard ones; but here was a new situation—to keep a car sold. It was a special car on our hands; I simply had to move it; that was all there was to it. Of course, we had a small deposit, but it was not our policy to hold it in a case like this. I had to sell



W. R. ALEXANDER

him all over again, and, believe me, he was far from a good prospect—and with a brand new car.

He said he wouldn't take but a minute of my time; he only wanted to know what we intended to do with his deposit; he expected to forfeit it. I had had a good many weeks to size up this man, and now I was going to see if I was a good judge of character, though a good deal was at stake. There was only one way to do it, and that was to get on his side of the fence with him. I assured him we realized his disappointment caused by the delay-his embarrassment in having to postpone his trip, and that while we were sorry to lose him as a H owner, we valued his good wishes toward us above everything else and would gladly return his deposit in full. It was the unexpected for him, and I could see it had gone home when he said he would like to see the car if it was finished.

The car was a beauty; there was no question about that, but I didn't comment on it as I knew he could appreciate it and I felt that this was one time when it was best not to talk. He didn't say a word, but walked all around it and finally got in it. I was selling him by letting him sell himself. When he put his hands up on the wheel and exclaimed "She's a bird!" I knew it was all over.

We ran the car out that afternoon and as he was smiling and telling me goodby on the start of his trip he told me he really \$100 deposit on it, which he was willing to lose.

I claim that was my sale--and my best

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#### Fourth Award-FRANK RALEDNIS, Omaha, Neb.

My definition of Salesmanship is that it is "a science or art of managing any commodity or self, equal in value, excellence or weight, at a fair margin of profit, by a bold, honorable, enterprising, energetic human being," and in relating the following, I want to assure you it is frank and honest.

"Come back after supper, John," called a young man as the dealer and his customer were leaving. "I'll be here, and I want to talk to you."

"All right, we will be back," was the reply.

This dealer and customer had come in from a distance to buy a machine. The sales manager took charge of them upon their arrival, sized them up as "nothing doing" and turned them over to a travelling salesman who had come in from the territory. This salesman likewise gave up the work, and as the 5:30 whistles blew he was endeavoring to get rid of his parties.

It was I who asked the dealer to come

back after supper. I knew he could not get a train for his home until 9 o'clock, and I surmised the customer was going to buy and wanted a machine, because my Rule No. 6 said so; Rule No. 6 is "When a dealer brings customers from a distance to your showroom they are 95 per cent. sold. Exert 5 per cent. tactics and you have the order."

I had a faint knowledge of the machine

—I knew it was all right—my enthusiasm
was great and I had sufficient grit to talk.

Promptly at 7 o'clock appeared the customers and I immediately brought out the subject. They outlined what they wanted and what they were willing to pay. Of course, it was entirely different from our established selling policy. I set about to change their minds. I became personally interested in their affair and considered myself as one of them—we figured together and asked questions.

I took pains to figure according to their ideas, at the same time bringing in point

after point in favor of the particular machine at a higher price than what they wanted to pay and the one the sales manager and salesman were selling. We worked conscientiously for an hour, and I was beginning to lose ground—they had made a mistake in figuring and, of course, odds were against me. I had made up my mind to cut the price, but just then a switch engine with a heavy load was passing our office and it seemed to say, "It's got to come—it's got to come."

This increased my vigor, my eye caught the error, I reached for the paper on which they had been figuring and rectified the error. It was done. The order was safely tucked away, duly signed and a cash deposit of \$100 was joyously conveyed into the vault, ready for the morning's deposit.

From the above experience I laid down my Rule No. 11.

Rule No. 11: "Persistency plus carefulness helps produce orders."

#### NEGLECT OF THE SHOW WINDOW A "HIGH CRIME" ON DEALER'S CALENDAR

The more one delves into the business of show windows and their relation to automobile sales the more one becomes convinced that many wonderful opportunities are being neglected. The general rule throughout towns of from 10,000 to 50,000 is absolute neglect. Apparently no one pays any attention to the condition of windows.

"If we had a dealer," said one manufacturer, "who did not keep his windows clean and who did not appreciate the plain possibilities of window displays we would let him go. Such a sleepy individual could not stay in our organization."

The man who was talking plainly showed that he had never called on all his own dealers at their places of business. He had only seen them with their best bib and tucker at the factory and had gained his impressions of their places of business from the big cities where one needs must have his place look neat and clean if he would do any business at all.

If he went to towns like Kokomo, Marion, Peru and Wabash in Indiana, or Canandaigua, Le Roy and Geneva in New York, or Findlay in Ohio, or to any other towns of similar size in any State, he would find an amazing lack of interest in window displays. Yet, an effective window display in Chicago would prove wonderfully interesting and effective in Yokohama—more interesting than in Chicago or New York because more unusual.

Rents are based on window display opportunities, just as much in Kokomo as they are in any other city. Drug stores and groceries and drygoods houses and hardware stores pay just as close attention to displays in towns of this size as they do in the cities of larger population. Why shouldn't the automobile dealer in towns of this size put just as careful and interested attention on window displays?

To begin with, why should not dealers in such cities have clean windows instead of uniformly cloudy ones? Supposing only one sale a year more is made by reason of clean, spotless windows, the profit would more than pay for the cost of cleanliness. Besides, clean windows not only let people see through but they advertise carefulness, snap, life.

You never saw a "dead one" with clean windows.

And clean windows start people thinking about keeping other things clean inside as well as attracting people outside. Think it over and your vote will all be in favor of the bright, spotless glass front.

#### Bloomington Show-Admission 10 Cents!

The automobile show which is to be held this month in Bloomington, Ill., will not be held January 17-21 and the admission will not be 10 cents! The McLean County Automobile Club wants that understood, but is having trouble because of the pranks of a practical joker or a man with a grudge.

The club was going ahead with the plans for its exposition but received a shock last week when it found that in some mysterious manner someone had posted all over town big red posters announcing that the show would be held January 17-21, "Admission, 10 Cents!" The promoters were wroth and

have been trying to learn who contributed this free and unwelcome advertising. The posters were even prominently posted in store windows.

The club hopes to learn who put them up, but expresses doubt as to its ability to do anything to the guilty man if he is caught, for the posters do not state where the show will be held; wherefore, if the much-sought person exhibits any old car in a barn on the dates in question for 10 cents per visitor he undoubtedly has lived up to his agreement, as announced in the posters. The real show will be held January 18-21, and the admission will not be 10 cents.

#### Birmingham Rescinds Bulb Horn Law.

When the city fathers of Birmingham, Ala., saw the error of their way in permitting only the use of bulb horns, they executed an about-face in correcting themselves. As a result, the new ordinance which they passed requires that every motor vehicle "be equipped with a Klaxon, or other signal, sufficient in character and volume to give ample warning to pedestrians and drivers of vehicles." It also forbids unnecessary noise by providing that signals shall be sounded only as "a warning of danger." Defining a "warning of danger," however, may prove difficult.



#### **LOWER PARCEL POST RATES** EFFECTIVE WITH NEW YEAR

Limit in First Two Zones 50 Instead of 20 Pounds-Material Reduction in Rates in All Zones-Books Admitted March 16.

Beginning to-day, January 1, new Parcel Post rates go into effect, making the sending of packages by mail less costly than heretofore and admitting 50 pounds instead of 20 in the first and second zones; the rates in all zones are lowered and the weight limit in those beyond the first two becomes 20 instead of 11. The complete changes, previously mentioned in Motor World, are incorporated in a government order which follows:

"On and after January 1, 1914, the limit of weight of parcels for delivery in the first and second zones will be 50 pounds (instead of 20 pounds as at present), and the rate in the first zone will be as fol-

"Local rate-5 cents for 1 pound, 7 cents for 5 pounds, 10 cents for 10 pounds, 12 cents for 15 pounds, 15 cents for 20 pounds, 17 cents for 25 pounds, 20 cents for 30 pounds, 22 cents for 35 pounds, 25 cents for 40 pounds, 27 cents for 45 pounds and 30 cents for 50 pounds.

"The zone rate in the first zone will be 5 cents for 1 pound, 9 cents for 5 pounds, 14 cents for 10 pounds, 19 cents for 15 pounds, 24 cents for 20 pounds, 29 cents for 25 pounds, 34 cents for 30 pounds, 39 cents for 35 pounds, 44 cents for 40 pounds, 49 cents for 45 pounds, and 54 cents for 50 pounds.

"In the second zone the rates on 1 pound or over will be the same as in the first zone."

In the third, fourth, fifth, sixth, seventh and eighth zones the limit of weight goes up to 20 pounds (instead of 11 pounds as at present), and the rates of postage on parcels weighing over 4 ounces in those zones will be as follows:

"Third zone-Six cents for the first pound and 2 cents for each additional pound or

"Fourth Zone-Seven cents for the first pound and 4 cents for each additional pound or fraction.

"Fifth Zone-Eight cents for the first pound and 6 cents for each additional pound or fraction.

"Sixth Zone-Nine cents for the first pound and 8 cents for each additional pound or fraction.

"Seventh Zone-Eleven cents for the first pound and 10 cents for each additional pound or fraction.

"Eighth Zone-Twelve cents a pound for

the first pound and 12 cents for each additional pound or fraction."

The first zone takes in approximately every place within 50 miles of the sending point. The second zone is the area within a radius of 150 miles; the third, all within 300 miles; the fourth, all within 600 miles; the fifth includes places within 1,000 miles; the sixth, within 1,400 miles; the seventh, 1,800 miles, and the eighth all places outside the seventh zone, including the Philippines, Canada, Mexico, Cuba, Porto Rico and Panama.

Parcels weighing four ounces or less will be mailable on and after January 1, 1914, at one cent for each ounce or fraction thereof, regardless of distance.

Beginning with March 16, 1914, books will be admitted to the parcel post. The rate of postage thereon will be one cent for each two ounces or fraction thereof on books weighing eight ounces or less. On books weighing over eight ounces the regular zone rates will apply.

#### Making Profit on Stamps Legal.

The sale of postage stamps for more than their face value, in slot machines and apparently by any other method, cannot be prevented by the Federal government, according to a ruling made recently by Third Assistant Postmaster General Dockery. His decision followed complaints from hotel patrons that they were being overcharged.

The machines sell four one-cent or two two-cent stamps for a nickel, making a profit to the merchant of one cent on each transaction. Many indignant citizens wrote to the Postoffice Department denouncing this as extortion.

Third Assistant Postmaster General Dockery said that while there is a law prohibiting the sale of stamps at more than their face value, it applies only to postmasters and their employes, and the government has no jurisdiction over stamp vending machines located elsewhere than on postoffice property.

#### "Blacklist" Is Not a Boycott.

A person who joins in a strike is not entitled to damages if he is not employed again by the parties against whom the strike was directed, according to an opinion rendered last week by Judge Loring of the Massachusetts Supreme Court.

The opinion was given in the appeal of the Haverhill Shoe Manufacturers' Association from the decision of a master that John Cornellier, who had participated in a strike, was entitled to damages because a so-called "black list" had prevented him from securing employment. Judge Loring held that the manufacturers had a right to combine to resist the strike and that the "blacklist" was not in the nature of a boycott.

#### RISE AND FALL OF CYCLECAR SKETCHED BY A LONDONE

Sudden Popularity and Keen Demand Quickly Followed by Pronounced Slump-The Factors Which Brought It About.

Contrary to all the prophecies of interested personages and the generally express ed opinion of the public, the cyclecar has proved a failure, says a London trade letter to a foreign contemporary. When a the motor show at Olympia last year, its cyclecar first made its official bow to the public, it was hailed on all sides as a war derful machine that had come to fill a loafelt want. The press, technical and lay were unanimous in their plandits.

And all this prophecy was wrong; the cyclecar has not caught the public fancy to anything like half the extent that was fore told. In the early part of the year, it is true, the sales were good, and the orders taken entirely satisfactory. And then for some reason the fever cooled off. Manufact turers working their staffs overtime to keep pace with the demand began to feel a sladness. The craze was evanescent; the cycle car had not proved its value sufficiently. This is one of the puzzles that all who desire to please the public must meet at some time. No one looking at the excellent productions of the miniature cars exhibited at Olympia could have said that they would not be popular. No one did say so. They all chirped on the opposite note.

Looking back over the year from the point of view now gained, one can see no sons for the failure to please that were not visible before. In the first place only a few of the cyclecar makes came up to the points claimed for them. Large numbers of frei cars were put out and found a sale, but their freakiness becoming more apparent a they were used, soon brought them into disrepute, and quite naturally this reflected of the best makes.

But more important than all as agent in the lack of popularity of the cyclecar is been the steadily increasing fancy for the cheap American cars. The Ford and the Flanders have so established themselves as sound inexpensive cars that the would be purchaser having once admitted that the purchase of a cyclecar would be advantage ous, is easily persuaded to "go a little more and buy an American car. His wife will not be satisfied with a cyclecar if her neighbor has a motor car. These are the points that were not fully taken into account last year The cyclecar has had a certain amount success, and still enjoys a limited popular ity, but the fact is it has not "hit the nal"

#### HOUSE ORGANS THAT PLAY INHARMONIOUS NOTES

## The "Old Man's Diary" Proves Weary Reading for Reilly—In Fact He Doesn't Read it—"Dealers' Publications" Which are Made to Please the "Boss", Not the Dealer—Reilly Suggests a Few Remedies.

"Fine!" exclaimed Reilly, turning the pages of the Old Man's Diary.

"Great!" he continued, as he flipped over another bunch of leaves in the third number of the company's attempt at a house organ. "Do you read it?" shot back Reilly before the Sales Manager could recover.

"Why-why-yes," was the reply, but it was not whole-souled and emphatic.

"Oh, you bold, bad, dissembler!" chanted the dealer, doing a boyish Ah-hah-I-caughtsuspected before in connection with this company publication.

"Who called it a joke?"

"Well, you don't take it seriously. Here we're spending—I don't know how much every month getting out that sheet and you go through it like a brick through a wind-shield—and it makes about as much impression on you as the windshield does on the brick. Why——"

"Well, what are you asking me questions for? Why don't you ask yourself? You don't read it, either. Why don't you ask yourself why you don't read it?"

"That's not-"



"GREAT!" AND REILLY THREW THE OLD MAN'S DIARY INTO THE WASTE BASKET

"Wonderful! Marvelous!"

The Sales Manager, roosting on the edge of a chair, one foot across a knee and leaning slightly forward, beamed.

"Great! Fine!" Reilly turned the last pages, looked at the colored back cover and threw the Old Man's Diary into the waste basket.

The Sales Manager quit beaming.

#### Looks at But Doesn't Read Them.

"You insulter!" he 'exclaimed. "Is that what you do with our house organs?"

Reilly laughed. "No, not all of them; I guess I've saved them all so far." He picked Volume I, No. 3, out of the basket and extracted Nos. 1 and 2 from a desk drawer and spread them out on his desk.

"But don't you read them?"

"I can't say that I do—very thoroughly," replied the dealer. "I look at them, however, just as I do everything that comes in in the mail."

"Why don't you read them?"

"Why should I?"

"What do you suppose we get it out for?"

"Now you've asked a hard one," smiled Reilly, who candidly confessed, "I don't know." you-at-it wherein one finger points tauntingly and the other works like a reciprocating part. "You don't read it, I don't read it. I'll bet the Old Man himself doesn't read

#### Reilly Analyzes the Old Man's Diary.

"Wait! Wait!" Reilly held up a silencing hand. "Look, Jim! Look here!"

Reilly dropped his air of jesting and picked up the copy of the house organ which had arrived that morning. The Sales Manager pulled his chair up to the desk.

Reilly turned to the first page. "Here's a story about a supposedly wonderful trip somebody took up a mountain in one of our cars. The story takes—one—two—three pages: it goes into all the details, tells all about stopping for lunch"—Reilly scanned



"CAR A WONDERFUL CLIMBER-NEVER BROKE DOWN-AND MORE JUST LIKE IT"

it, and if you get right down to it, I'll bet the only ones who read it from cover to cover are the men who write the copy and the 'comps' who set it up."

"This is darned serious, Reilly; it's no joke," returned the Sales Manager, who appeared to recognize a problem he had not

the story—"car a wonderful climber—never broke down—and a lot more just like it. Tell me, Jim, what's interesting in that? Why should I, a dealer, read it?"

"Well---"

"Then, on the next page, is a skit about you—picture of you sitting at your desk—



#### MOTOR WORLD

little fluffy stuff that's supposed to be funny. You read that, of course; so do I. Then here's the new 'four' and specificationsgood dope-that's one reason I saved the sheet, it's got specifications in it. Then here's a few more pictures and pufts-the Old Man in several different poses-an effervescent field manager who squeezed in somehow-another story about one of those marvelous trips-hot stuff, isn't it? And again I ask, why should a dealer read any of that stuff?

"Here's a picture and a little limelight for a dealer who placed a bigger order than I did-sort of patting him on the back, kidding him along for being a good customer. I suppose some of those fellows like to be 'jollied' that way. But I should worry! I sell more cars in a year than he does, so

the same, and the rest of the factory luminaries who got slapped on the back and puffed say it's good. Therefore, the advertising manager, having pleased everyone who counts toward his holding his job, sits back with his thumbs in the armholes of his vest and believes he has gotten out a crackerjack house organ."

The Sales Manager had accumulated a hectic flush

#### Many House Organs and Most Alike.

"Don't take it to heart, Jim; it's nothing to be alarmed about; everybody's doing it. The country is flooded with house organs and most of them are built according to the same specifications. But what is the result? The company is spending a hundred dollars or so a month and imagines it



"THE ADVERTISING MANAGER BELIEVES IT'S A CRACKERJACK HOUSE ORGAN"

what do you care? Maybe I'll be 'jollied' in the next issue?"

The Sales Manager said nothing. Reilly continued to turn the pages.

#### Texas Show Story That Needs Salt.

"Then here's a taurus tale about what a hit our cars made at a show in Texas. Taken without a grain of salt, this would lead anyone to believe that the population swarmed around our dealer's booth and that the rest of the dealers sat around in chagrin and watched all the prospects flock to our dealer."

"Maybe they did."

"And maybe they didn't! I've seen scores of shows and I never saw such a thing happen yet. Show visitors don't act that way. And the rest of the Old Man's Diary is much the same." added Reilly as he hurried over the last few pages. "Now-to analyze the situation. The book, I suppose, is gotten out by the advertising manager. He wants to make good with it. The Old Man is tickled by his write-up-everyone is. more or less-and he says it's a good house organ. You got a piece of the glory, and you say it's good; that field manager says

is creating a sensation with a sheet that is wonderfully popular. It is popular-with the men who get their pictures in the paper and the rats which infest the waste paper baskets of the dealers."

"Well, now that you've torn the clothes off of the Old Man's Diary, kindly give it something to wear. What's the matter with it and what would you do with it-discon-

"I've told you what's the matter with it," replied Reilly, "but I wouldn't discontinue it. There's a lot of good in a publication of this kind, but not when it's run this way. You will admit, I think, that your idea was to help out the sales work, and the house organ can be made to do just that thing. You used to get out a monthly letter affair; there was good stuff in it and the dealers used to read it. I don't know that it could have been called a house organ, but it was good. But it deteriorated and gave place to

"The big trouble with you house organ promoters is that you start out well but lose sight of your ideal. You aim to put out a sheet that will be popular with the dealers and help them, but before you have gone

far you lose sight of the dealer and the advertising manager gets to making himseli solid with the powers that be. No factory can get out a publication for dealers unless it keeps in mind the standpoint of the dealer.

"When you write anything for the house organ, ask yourself, 'If I were a dealer would I read it? Would it do me any good?' And for that matter-if the house organ is intended for more than the dealer -ask yourself if anybody can be expected to read the stuff. Strenuous automobile tours are stale, ancient history today. What one car does many others can do, as a general rule, and this over-exaggerated, puffy stuff is wasted effort.

#### Aiming at the Dealer and Hitting Him

"There are some good house organs in this business. The Prince people come as near to my idea of a good one as any I have seen. It's almost a Prince dealer's trade paper; it contains trade news that is of interest to the dealers; it tells one Prince dealer what the others are doing; it keeps the big Prince family in close touch, and the dealers look for that sheet as they look for the morning paper.

"All of this has gotten a hold on the dealer and he reads it. Now-along with this newsy stuff are other things which the dealer might never look at but which he will read if put up to him in the right way. There are sales talks, efficiency talks, de scriptions of dealers' selling methods and pointed, attractively written talks by heads of departments to the dealers. If a man has something to say he says it in the house organ.

"All this uplift stuff is good; the dealers like it, and what is more, they read it. It gives the house organ a mission, a reason for being, and it doesn't make business for the rats and the rag peddlers."

#### Question That Should Always Be Asked

"But we may want to send this to more than the dealers. Everyone wouldn't want all that selling dope and such stuff."

"Again I ask, would they read this stuff that you have printed? You are interested in the very factory that builds the car and you don't read it yourself. In everything Jim, get in the position of the man you're aiming at and you'll know best how to hit him. But these back-scratching, puffy house organs seem to be aimed at the 'inner circle' in the organization, and they certainly are aimed truly."

"Well!" The Sales Manager sat back with a what-are-you-gonna-do-about-it pose. "the advertising manager hits what he aims at. doesn't he?"

"Yes, but for aiming at the dealers he's worse than a hobble skirt on second base."

#### SHOWING NEW CAR IN A WAY THAT'S DIFFERENT

## How Detroit Dealers Created a Real Trade Sensation When They Got the New "Six"—"Darkened" Windows That Whetted Interest—Turntable Injected Movement—Details and Results of the Plan.

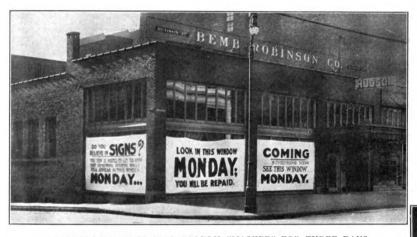
When the new model comes into your tore, what? Are you satisfied with an anouncement in the papers and word of nouth announcements to those you meet? f a casual passer-by looked into your win-

you doing the same things you did last year or have you some better ideas that you have put into force? These are pertinent questions. On the way you answer them depends much of your enthusiasm, much from the rest, both in volume of sales and in general prosperity.

Of course, if an idea is good it can be worked as long as it is good, but sometimes it is possible to employ the same idea basically and put such an interesting garb on it that it seems outwardly like a new idea and has all the force and compellingness—to coin a word—of a brand new idea.

The Bemb-Robinson Co., of Detroit, whose plans and methods have won frequent mention in this paper simply because they are very wide awake and not a bit afraid to employ new ideas and put them into force even if they do cost a little money, pulled off a stunt in the way of showing a new model that made even blase Detroit sit up and blink its eyes for several moments.

Only a few weeks before they had closed



SALESROOM AS IT WAS BOLDLY "MASKED" FOR THREE DAYS



DISPLAY DISCLOSED WHEN "MASKS" WERE REMOVED-CAR ROTATING ON TURNTABLE

low, would there be any message there hat would invite his curiosity and allure im into the store?

If a motorist should drive by, what sort f a signal do you give him that you have omething new, something different? Are

of the enthusiasm of your men—and practically all of the much sought after success of your business.

"Please do the same thing over and over and over again," is the sort of idea that should be avoided if you desire to stand out a wonderfully successful "Sedan Week." From every standpoint it had been profitable. It was fully described in Motor World at the time. The fundamental idea at the bottom of their "Sedan Week" was to devise ways and methods by which they

could attract people to their salesrooms. Exactly the same problem was presented when it came to the question of showing the new Hudson 6-40. Previously they had canvassed their entire mailing list with invitations by card and by telephone and by newspapers. Now they had an entirely new car on their floor. They wanted everybody to see it and know about it. What plan should they follow this time?

The matter was thought over very carefully and a plan developed that was in many respects similar to what they had done before but in other respects entirely different.

They wanted to get people into their salesroom. They had a new car, but many other dealers had new cars. People as a whole were rather inclined to be bored by news of new cars. Yet if they could only get them in to see this car, thought Messrs. Bemb and Robinson, it would make a difference.

They figured out a plan-and it worked. It is for this reason that it is recorded for Motor World's readers. Again, it is an idea that can be employed in any salesroom or garage with ordinary facilities and ordinarily good show windows.

First, they announced the car in the newspapers; then they sent out announcements by mail. This, however, was merely preliminary work. The next move was to cover up both show windows with canvas, shutting out all view of the interior. As will be seen by referring to the accompanying photograph, the window coverings were lettered in a way to arouse curiosity. One window bore the message, "Something will appear in this window Monday that will interest you." The other window said, "Be sure to see this window Monday." This set people talking and paved the way adequately for what followed. Meanwhile they prepared to make the interior of the salesroom so unlike its ordinary self and so much more attractive that the public would pause and look.

Skillful decorators were employed, and by means of potted palms, vines, ferns, flowers, etc., furnished at an expense of not to exceed \$75, the salesroom was transformed into a place of beauty.

This was simply the framework. The next thing was to place the car adequately in this setting, so it would command unusual attention. Here is where nine out of ten would fail. It is exactly where Bemb and Robinson succeeded.

They interviewed a turn-table manufacturer and had an ordinary turntable set on top of their floor. This they had belted to a small electric motor. The car was placed on the turntable in exactly the center. The edge of the turntable was covered with green leaves and branches. Close up to it on the floor was a low ornamental hedge

of green, bushy leaves concealing the edges of the turntable and making it blend with the other decorations. The entire effect was exceedingly artistic and unusual. The electric motor was switched on and the turntable started on its continuous journey.

At once the advantages began to appear. Here was something moving. That always makes people stop. Next. customers or prospects who came in could be readily seated, and there was the car being turned before them. They got a side view, and end view of rear, and presently another side and front. Thus, without moving from the spot, where they were shown the whole car.

It made a hit. "That's clever!" "That's great!" were the comments of visitors.

At night the electric headlights were turned on and these, flashing out the windows and then back into the store like the lights from a revolving lighthouse, attracted many a passing motorist and not a few of them stopped and got out of their cars to get a closer view.

Quite an important part of the plan was the fact that all salesmen were kept in the store for the week and every prospect who came in was surely welcomed by the particular salesman who previously had called.

Needless to say, there was a little "quiet spot" over in one of the corners to which the salesman and his prospect could retire to go through that delicate operation of getting names on the dotted line, without interference or distraction.

Did they get any?

"Well, the record of ten sales in two weeks is not bad! And we keep hearing from it every day," said Walter Bemb; "more than that, we were unusually successful in getting in close touch with a large number of new prospects."

#### Gasolene Exports Record Heavy Gains.

During October, 1913, there were exported from the United States 9,491,309 more gallons of gasolene than were shipped out in October, 1912; the increase in valuation for the same months was \$1,671,637, or 203 per cent. The gain per cent. in gallons was 146. The average price was 15.6 in October, 1913, and 12.6 in October, 1912.

The exports by countries follow, the items being given in this order: Country, gallons in October, 1912; value; average price; gallons in October, 1913; value; aver-

Belgium; 145,000; \$10.250; 7.1 cents; 750,-000; \$103.875; 13.8 cents. Other Europe; none in October, 1912; 6.786,769; \$943,388; 13.9 cents. Canada: 5.603.605; \$690,898; 12.3 cents; 3,718,886; \$551,462; 14.8 cents. Argentina; none in October, 1912; 2,599,288; \$464,660; 17.8 cents. Brazil: 526.834; \$76,-305: 14.5 cents; 623.275; \$121.757; 19.5 cents. British Oceania; none in October. 1912; 571,740; \$124,982; 21.8 cents. Other countries; 242,260; \$46,399; 19.1 cents; % 052; \$185,365; 19.3 cents. Total; 651786. \$823,852; 12.6 cents; 16,009,008; \$2,495,65 15.6 cents. For ten months ending with 0: tober, 1913-100,353,871; \$14,667,999; H

F. I. A. T. Again Sues Isotta-Fraschin F. I. A. T., of Poughkeepsie, which is July last sued the Isotta-Fraschini Motors Co., of New York City, for alleged is fringement of a two-speed rear axle pater, filed another suit against the same company last week in the United States District Court for the Southern District of Nor York; this action charges infringement of the Guido Fornaca rear spring frame atachment patent, No. 979,278, granted le cember 20, 1910. The patent covers the 2tachment of the upper part of a three-quater elliptic spring to the side frame without the use of a steel bracket.

#### Studebaker "Six" Remains Unlengthend

In the Studebaker advertisement which appeared on the back cover of Motor World's issue of December 11th the wheelbase of the "six" was inadvertently gire as "131 inches," whereas the correct wheelbase is 121 inches. All other features noted in this advertisement were correct, as it is a seven-passenger, six-cylinder car, electric ally started and lighted, completely equipped and luxuriously upholstered, selling at \$1,575.

Adds 19 Links to Corbin-Brown Chain

The American Hardware Corporation has completed the establishment of Corbin Brown speedometer service and supply str tions in 19 cities, as follows: Washington Baltimore, Pittsburgh, Syracuse, Rocheter, Toledo, St. Louis, Cincinnati, Colum bus, Grand Rapids, Indianapolis, Milwatkee, Duluth, Omaha, Kansas City, Louis ville, Dallas, and San Antonio.

Albany Vulcanizers Owe Republic Rubber The Republic Rubber Co. of New York filed suit this week in the Supreme Court for New York county against the Albam Vulcanizing Works, of Albany, N. Y. Its charged that the defendant gave its 20-day note for \$2,405.79 October 14, 1913, and failed to meet the obligation.

Illinois Dealer Mysteriously Disappears

B

 $C_{a}$ 

George P. Laughlin, one of the prominent automobile dealers in Quincy, Ill., is mising. He sold a garage on Friday, two weeks ago, and as he had the proceeds in his Pocket it is feared that he may have me with foul play. At any rate, no trace of him has yet been found.

#### ALMOST READY TO BLAZE

(Continued from page 17.)

on; like the Weidely motor, the Moline-Inight has no manifolds, properly speakig, these necessary adjuncts being cast ins le egral with the cylinders-still another difgrence between this Knight motor and uen very other. And, last but not least, the omplete car sells for the exceedingly modst sum of \$2,400—yet another record for he Moline-Knight, for it is the lowestriced Knight-engined car on the records. Leaving the Knight motor aside, pro tem., here will be only two other motors at the how that are not operated by the orthodox ype of poppet valves. One of them is the peedwell-Mead rotary valve motor, which 1ade its first public appearance at the show ast year, but which in the meantime has ndergone no little refinement, and the ther is the Fischer motor, which is to be xhibited by the Fischer Motor Corp. The atter differs from others in that it has liding crescent-shaped valves which recipocate in pockets at either side of the cylin-

If there is any undue crowding among he exhibits of gasolene cars at the Grand Central Palace, it certainly will not be because of the super-abundance of electrical vehicles, for New York is upholding its rec-



THE "SHOW GIRL" OF 1914

ord for small numbers of these "chariots of ease," as someone called something on wheels, and there will be but six makers in evidence. There is comfort, however, in the fact that none of these were exhibited at the "big shows" in New York last year, and one—the Ward—never has been exhibited at all.

Among the cars that will be shown-Baker, Detroit, Ohio, Rauch & Lang, Ward and Waverley-there will be representatives of the most important advances that have been made in electric car design since the last show. Five out of the six makes shown have adopted, for some of their models, dual control systems-all except the Ward; and the height of style will be embodied in the Paul-Poiret-decorated Bakers. The Ward is a coupe-only one model is built-and it is especially interesting because of its powerful equipment in proportion to its moderate price, as the prices of electrics go. Worm-drive models are built by Baker, Rauch & Lang and Detroit; Waverley, with reason, is content with its herringbone gear

As for body novelties, the Ohio people have a runabout that is so much like an extremely good-looking gasolene car that it doubtless will require a little explanation to convince some of the showgoers that it is anything else. A feature of the Ohio car, though by no means a new one, is its magnetic control of the speed and braking.

#### Summary of Cars to be Exhibited in New York, Jan. 3-10

A, denotes first floor; B, second floor, and C, third floor.

Abbott Motor Car Co., Detroit, Mich.—

By Abbott-Detroit four- and six-cylinder

cars (A-23).

Allen Motor Co., Fostoria, O.—Allen fourand six-cylinder cars (C—11).

Anderson Electric Car Co., Detroit, Mich.— Detroit electric cars (B—26a).

Apperson Bros. Auto Co., Kokomo, Ind.— Apperson four- and six-cylinder cars (A-2).

Auburn Automobile Co., Auburn, Ind.—Auburn four- and six-cylinder cars (B—16).

Baker Motor Vehicle Co., Cleveland, O.— Baker electric cars (B—27).

Briggs-Detroiter Co., Detroit, Mich.—Detroiter four-cylinder cars (B—12).

Briscoe Motor Co., New York City—Briscoe four-cylinder cars (C—7).

Buick Motor Co., Flint, Mich.—Buick fourand six-cylinder cars (A—15).

Cadillac Motor Car Co., Detroit, Mich.—
Cadillac four-cylinder cars (A-11).

Cameron Mfg. Co., New Haven, Conn.— Cameron four-cylinder cars (C-16-.

Cartercar Co., Pontiac, Mich.—Cartercar four-cylinder cars (B—28).

Case, J. I., T. M. Co., Racine, Wis.—Case four-cylinder cars (B—22).

Chalmers Motor Co., Detroit, Mich.—Chalmers four- and six-cylinder cars (A—17).
Chandler Motor Car Co., Cleveland, O.—
Chandler six-cylinder cars (C—5-6).

Cole Motor Car Co., Indianapolis, Ind.— Cole four- and six-cylinder cars (A—14). Cornelian Co., Kalamazoo, Mich.—Cornelian four-cylinder cyclecars (C—18).

Crescent Motor Co., Cincinnati, O.—Ohio tour- and six-cylinder cars (C—9).

Davis, Geo. W., Motor Car Co., Richmond, Ind.—Davis four-cylinder cars (C—10).

Empire Automobile Co., Indianapolis, Ind.
—Empire four-cylinder cars (C—21).

F. I. A. T., Poughkeepsie, N. Y.—Fiat fourand six-cylinder cars (B—15).

Fischer Motor Corp., New York City—Fischer six-cylinder cars (C-14).

Franklin, H. H., Mfg. Co., Cyracuse. N. Y.

—Franklin six-cylinder cars (A—29).

Garford Co., Elyria, O.—Willys-Knight four-cylinder cars (B—2).

Great Western Automobile Co., Peru. Ind.

—Great Western four-cylinder cars (B—
5).

Havers Motor Car Co., Port Huron, Mich.

—Havers six-cylinder cars (B—17).

Haynes Automobile Co., Kokomo, Ind.—

Haynes four- and six-cylinder cars (B-23).

Henderson Motor Car Co., Indianapolis, Ind.—Henderson four- and six-cylinder cars (B-7).

Herreshoff Motor Co., Detroit, Mich.— Herreshoff four- and six-cylinder cars (B—20a).

Hudson Motor Car Co., Detroit, Mich.— Hudson four- and six-cylinder cars (A— 16).

Hupp Motor Car Co., Detroit, Mich.—Hupmobile four-cylinder cars (A-12).

Imperial Automobile Co., Jackson, Mich.—
Imperial four- and six-cylinder cars (B—
11).

Jackson Automobile Co., Jackson, Mich.— Jackson four- and six-cylinder cars (A— 18).

Jeffery, Thos. B., Co., Kenosha, Wis.—Jeffery four- and six-cylinder cars (A—32).

Keeton Motor Co., Detroit, Mich.—Keeton six-cylinder cars (C—19).

King Motor Car Co., Detroit, Mich.—King four-cylinder cars (C-2).

Kissel Motor Car Co., Hartford, Wis.— Kissel four- and six-cylinder cars (A-8). Kline Motor Car Corp., Richmond, Va.— Kline four- and six-cylinder cars (B-21). Krit Motor Car Co., Detroit, Mich.—Krit four-cylinder cars (A-25).

Locomobile Co. of America., Bridgeport, Conn.—Locomobile six-cylinder cars (A —4).

Lomax Motor Car Co., Lomax, Ill.—Lomax four-cylinder cars (C-1).

Lozier Motor Co., Detroit, Mich.—Lozier four-and six-cylinder cars (A-24).

Lyons-Atlas Co., Indianapolis, Ind.—Lyons-Knight four-cylinder cars (C-3).

McIntyre Co., W. H., Auburn, Ind.—Mc-Intyre four-cylinder cars (C—8).

Marion Motor Car Co., Indianapolis, Ind.—
Marion four- and six-cylinder cars (B
—29).

Maxwell Motor Co., Inc., Detroit, Mich.— Maxwell four and six-cylinder cars (A—30).

Mercer Automobile Co., Trenton, N. J.— Mercer four-cylinder cars (B—9).

Metz Co., Waltham, Mass.—Metz four-cylinder cars (C-4).

Mitchell-Lewis Motor Co., Racine, Wis.— Mitchell four- and six-cylinder cars (A— 10).

Moline Automobile Co., East Moline, Ill.—Moline four-cylinder cars (B-30).

Moon Motor Car Co., St. Louis, Mo.— Moon four- and six-cylinder cars (B-8). Motor Car Mfg. Co., Indianapolis, Ind.— Pathfinder four- and six-cylinder cars (B-14).

National Motor Vehicle Co., Indianapolis,

Ind.—National four- and six-cylinder cars (B—4).

Nordyke & Marmon Co., Indianapolis, Ind.

—Marmon four- and six-cylinder cars
(B—1).

Oakland Motor Car Co., Pontiac, Mich.—
Oakland four- and six-cylinder cars (A
—13).

Ohio Electric Car Co., Toledo, O.—Ohio electric cars (B—27a).

Olds Motor Works, Lansing, Mich.—Oldsmobile six-cylinder cars (B—8).

Packard Motor Car Co., Detroit, Mich.— Packard six-cylinder cars (A—26).

Paige-Detroit Motor Car Co., Detroit, Mich. Paige-Detroit four-cylinder cars (A-7).

Palmer & Singer Mfg. Co., Long Island City, N. Y.—Palmer-Singer six-cylinder cars (C—20).

Partin Mfg. Co., Chicago, Ill.—Partin four-cylinder cars (C-13).

Peerless Motor Car Co., Cleveland, O.— Peerless six-cylinder cars (A--5).

Pierce-Arrow Motor Car Co., Buffalo, N. Y.

—Pierce-Arrow six-cylinder cars (A—27).

Pope Mfg. Co., Hartford, Conn.—PopeHartford four- and six-cylinder cars
(A—6).

Premier Motor Mfg. Co., Indianapolis, Ind.
—Premier six-cylinder cars (A-28).

Pullman Motor Car Co., York, Pa.—Pullman four- and six-cylinder cars (B—6).

Rauch & Lang Carriage Co., Cleveland, O.
—Rauch & Lang electric cars (B-25a).

Regal Motor Car Co., Detroit Mich-Regal four-cylinder cars (A-9).

Reo Motor Car Co., Lansing, Mich-Rey four-cylinder cars (A-21).

Speedwell Motor Car Co., Dayton, 0.-Speedwell six-cylinder cars (B-13).

Stearns Co., F. B., Cleveland, O.—Sterns Knight four- and six-cylinder cars (A-I). Stevens-Duryea Co., Chicopee Falls, Max.—Stevens-Duryea six-cylinder cars (B-24).

Studebaker Corp., Detroit, Mich.—Studebaker four- and six-cylinder cars (A-A) Stutz Motor Car Co., Indianapolis, Ind-Stutz four- and six-cylinder cars (B-II) Twombly Car Corp., New York City-Twombly two- and four-cylinder cydecars (C-15).

Vaughan Car Co., Inc., Kingston, N. Y.-Vaughan six-cylinder cars (C-22).

Velie Motor Vehicle Co., Moline, Ill.-Welie four- and six-cylinder cars (A-22). Vulcan Mfg. Co., Painesville, O.-Wulcan four-cylinder cars (B-20).

Ward Motor Vehicle Co., New York City-Ward electric cars (B-25).

Waverley Co., Indianapolis, Ind.—Waverley electric cars (B—26).

White Co., Cleveland, O.—White four and six-cylinder cars (A—3).

Willys-Overland Co., Toledo, O.-Overland four-cylinder cars (A-19).

Winton Motor Carriage Co., Cleveland, Q.—Winton six-cylinder cars (A-31).

## "High Spots" of the Accessory Department Outlined

Whether or not there is any sameness in the construction of complete cars—there is in some makes and there isn't in others—there always is enough variety and enough that is new in the section of a big show set aside for the accessories to keep one on the move from one booth to another, and it is a mighty poor show that can't produce a few genuine surprises.

The accessories exhibits at the forthcoming "big show" at the Grand Central Palace give every promise of being about as interesting and as full of unexpected things as any show since the days when practically everything was unexpected because it was the first of its kind. As was indicated in the tabloid description of accessories printed in the Before Shows number of Motor World on December 18th, there will be novelties in practically every group of the 250-odd exhibitors of those things that go to make up and to finish off the equipment of cars. Some of them are new only in that they have not been exhibited at a show before; some are old ideas in new dresses; some are developments of more or less familiar things; and some—a few-are new

all the way through. Standing out boldly in the latter class is the electric brake that unexpectedly has come from the laboratories of the Hartford Suspension Co., and is a surprise not only by reason of its source, but because it is not a magnetic brake, as might have been anticipated, but is operated by a motor. The electric brake rounds out the list of controls operated by the mystic fluid. No, not quite, either. There's still the steering to be done by dint of muscular exertion. But doubtless someone will bring out an electric steerer before many moons have waxed and waned. It's already done on trucks, anyway.

In the electric lighting and starting field there are things so new that no one—not even the almost all-knowing tradesman—can give an inkling as to what's coming. This particular shot hits the Dyneto electric lighting and starting system, which is shrouded in a mystery that will be blown away only by the draughts that follow the opening of the doors of the Grand Central Palace on the afternoon of January 3rd. The Remy company has entered into starting and lighting with such vigor that its

brand new line includes four separate stars ing motors, two separate generators and two combination machines or motor-dynmos. A single unit starting-lighting # chine has been added to the Deaco line, " tended especially for use in light cars and cyclecars. A new Jesco outfit shows effect of the tendency toward using the lighting-and-starting battery current to ignition, being a set that cranks, lights as ignites. The Kemco generator is an e ceedingly well-planned little dynamo; forms a rather large hub for a fan and 5 driven by the fan belt, generating current for battery charging. The Splitdorf people are holding an impenetrable curtain over starting and lighting system, and it's poss ble only to say that it's sure to be good Their exhibit will also include the Aplo starting and lighting equipment.

Compressed air as a starting agent not lack adequate representation. To Gemmer-Detroit company has a starting system that is much like an electric system in that the four-cylinder air pump, who supplied with air of its own pumping, act as a motor for starting, an air distributed.

having much the form of an electrical distributer, except that instead of contacts there are valve ports. The Thurber airstarting system has been redesigned to the extent of making the two-cylinder reciprocating pump and the rotary type motor a unit at the forward end of the crankshaft, instead of mounting pump and motor separately. The Kellogg people have worked out an air-starting system especially for Ford cars, which can be attached by anyone with a little mechanical handiness and a few tools.

#### Much Newness in Lamps and Horns.

There surely will be things stirring in the world of lamps, for there are to be seen things that will make showgoers stop, look and listen, and look again. The youngest of the lamp tribe, as far as is known, is the Roffy electric lamp that stands vertically with the bulb at the bottom of a tube, and has a reflecting mirror that shoots the light out ahead in a sharply-defined circle that sheds no stray beams to dazzle. A series of lenses concentrates and evenly distributes the illumination. Among the new lamps there is one that is a theoretical impossibility-but a practical success. It is the Arbeco all-glass lamp-glass within and without, before and behind, with but a single metal ring for a door frame. And if that isn't enough, there's the J-M Mobilite lamp, which is of hard rubber throughout and is designed to operate on current from a dry battery and to give efficient service for dash and tail service. The Jaco sign lamp is designed especially for illuminating those confounded road signs that are so hard to see at night; it is swiveled on the side bar of the windshield and can be aimed in any old direction.

When it comes to horns, there's one continuous chorus of youngsters. Hand-operated horns, built on motor horn lines, are setting up a terrific din, in which can be recognized the notes of the hand Klaxon, the Motophone, which has a governor, the Sparton Echo horn, the Clympic, the Clero, the Pilot—there will be hand horns on all sides. The Sparks-Withington people have brought out a push-button that can be operated by pressure from any direction at all,

which is a grand good thing on a cold day when one's gloves are thick and one's fingers all thumbs. The makers of the Motophone horn use on one of their models a Bowden wire arrangement so that the mechanical horn can be sounded from a distance, like an electric horn. A new Jericho has been designed especially for the horde of Ford cars.

There isn't much that is alarmingly new in ignition apparatus; most of the new things are just developments of older things. Perhaps that had better be modified a little, for the Remy people have done a new thing, for them, in bringing out a line of magnetos with shuttle-wound armatures instead of the inductor arrangement that was formerly employed. Splitdorf has a new high-tension model. The roly-poly Mea has appeared in a larger model. The K-W people have added a new induction generator. The Atwater Kent unisparker has been brought out in two new models, one especially for manufacturers of cars and the other for Fords, and the name little car has had built for it a master vibrator and some other ignition specialties by the New York Coil Co.

#### Shock Absorbers Reveal Improvement.

Le Telesco-yes, yes, it's a French device-combines the spring and hydraulic principles. Another importation is the Herz. The Sager people have placed on the market the J. H. S. spring-and-cylinder absorbers in several models, including one for Fords, of course-speaking of which brings up the fact that there's the Ely shock absorbers, for Fords only. The Ames is a reversed leaf spring. A new Velvet is made for Fords. In fact, about everyone is making special models for Fords. And one ought to see the Universal, in which ball joints help easy motion and springs absorb vibration. The Hartford people, too, have a new one.

Power pumps are a whole lot better than they used to be, for they are built like little gasolene motors. The Stewart-Warner Corp. has "gone into" pumps and is showing a single diaphragm type, a two- and a four-cylinder. The Kellogg pumps have gone up now to six cylinders, for heavy

work, and are of metal throughout; the smaller types are retained, with improvements. The Gemmer-Detroit pump will be shown mounted for garage use; it is the same pump that is used as both compressor and motor in the engine-starting system of that make.

There's no rest for the carburetter folks -not for a minute. They have been right on the job, and the proof will stick out in all directions at the shows. The good old Schebler is built in a new model that has a brand new automatic control plan, the flow of gasolene being controlled directly by the auxiliary air valve. Stromberg has espoused the double jet principle and there are two new models, each with two nozzles; in one of them one jet can be cut out if it is not needed. The Eiker turns the spray nozzle over on its side and locates it in the middle of the butterfly throttle, so that the opening of the throttle increases the flow of fuel. The inevitable Ford special finds a place in the line of Kingston carburetters this year. There's a dark secret in carburetters that will be illuminated only when the show opens-the Stewart carburetter, shown by the Detroit Lubricator Co. That's all there is about it till then.

#### Supplementary Springs of New Types.

The wind is blowing strongly in the direction of auxiliary spring shock absorbers, as was stated in the Before Shows number of Motor World-and no more convincing indication is needed than the fact that the Hartford company has brought out one of that type, a good one, needless to state, in addition to a new model of the standard Truffault type, with three degrees of friction and an automatic adjustment. The Cox rebound E-Zer is a combined spring and friction device, while the shock absorber of the same make has both a piston and a spring check. The Rex shock absorber combines spring and air resistance and is adjustable by a single nut. The A. V. shock absorber is imported, and is a hydro-pneumatic-spring device. What is almost a new cushioning substance has been evolved with the Flentje shock absorber, air and oil being mingled to form a sort of froth which is extremely sensive to vibration.

#### Summary of Accessories to be Exhibited in New York Jan. 3-10.

C. denotes third floor and D, fourth floor.

Ajax Trunk & Sample Case Co., New York

—Ajax trunk and tire cases (D—104).

American Bronze Co., Berwyn, Pa.—Non-

American Express Co., New York-Information booth (D-17).

Gran bearing metals (C-115).

Apple Electric Co., Dayton, O.—Aplco lighting and ignition systems (C—94-95).

Arnold, N. B., Brooklyn, N. Y.—Slikup specialties (D—140).

Asbestos & Rubber Works of America, New York)—Motobestos and asbestos products (D—105).

Asch & Co., Inc., New York—Bumpers, shock absorbers, etc. (D—58).

Automobile Club of America, New York—(D-109-110).

Automobile Journal Pub. Co., Pawtucket, R. I. (D-32a).

Automobile Trade Journal, Philadelphia, Pa. (D-203).

Automobile, New York (D-205).



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Automobile Dealer and Repairer, New York (D-108).

Automobile Supply Mfg. Co., Brooklyn, N. Y .- Newtone and Motophone horns (D-29)

B. & L. Auto Lamp Co., New York--B. & L. lamps (D-174).

Badger Brass Mfg. Co., Kenosha, Wis .-Solar lamps (C-46).

Baker, F. A., & Co., New York-Indian motorcycles, Trumbull cyclecars, Simplex sidecars and motorcycle specialties (D-6).

Baum's Castorine Co., Rome, N. Y .-Baum's automobile body soaps (D-101). Bausch Machine Tool Co., Springfield, Mass.—Bausch drilling machines (D-60).

Benford Mfg. Co., Mt. Vernon, N. Y .-Monarch spark plugs, lamp lighters and wheel pullers (D-90).

Berg Auto Trunk & Specialty Co., New York-Berg automobile trunks (D-138-139)

Bicycling World Co., New York (D-173). Blackledge, John W., Mfg. Co., Chicago-Velvet shock absorbers (D-89).

Bock Bearing Co., Toledo, O.-Bock roller bearings (D-34a).

Bowser, S. F., & Co., Inc., Ft. Wayne, Ind. —Gasolene storage systems (C 47-48).

Braender Rubber & Tire Co., Rutherford, N. J.-Braender tires (D-106).

Breeze Carburetter Co., Newark, N. J.-Breeze carburetters (C-89).

Brown Co., Syracuse, N. Y.—Brown Impulse tire pumps (D-215).

Brown, Wm. H., Cleveland, O.-Brown Trafilog and Brown top lifter (D-122). Brown-Lipe-Chapin Co., Syracuse, N. Y .-Gearsets and bevel gears (C-66).

Buda Co., Harvey, Ill.—Buda motors (C-

Budd, Edw. G., Mfg. Co., Philadelphia, Pa. -Sheet steel bodies (D-196-197).

Byrne, Kingston & Co., Kokomo, Ind .-Kingston carburetters and ignition specialties (C-59).

Carr, F. S., & Co., Boston, Mass.-Neverleek top materials (D-87).

Cataract Rubber Co., Boston, Mass.—Cataract tires (D-40).

Champion Ignition Co., Flint, Mich-A C spark plugs (C-106).

Champion Spark Plug Co., Toledo, O.-Champion spark plugs (D-12).

Chase, L. C., & Co., Boston, Mass.—Chase top fabrics (C-72).

Chauffeur Publishing Co., Syracuse, N. Y. (D-51).

Clark, A. N., & Son, Plainville, Conn.-Individual windshields (F-2).

Cleveland Hardware Co., Cleveland, O .-Automobile hardware and standard parts (D-12a).

Cleveland Worm & Gear Co., Cleveland, O. -Worm gears (D-16).

Clucker & Hixson, New York-Sundries (F-1).Coes Wrench Co., Worcester, Mass.-Coes

wrenches (C-57). Columb Tyres Import Co., Inc., New York

-Prowodnik tires (D-45).

Cook's Sons, Adam, New York-Albany lubricants (C-58).

Corbin Screw Corp., New Britain, Conn.-Corbin-Brown speedometers (D-202).

Cowles, C., & Co., New Haven, Conn.-Fisher mechanical window lift and other automobile specialties (C-116).

Cox Brass Mfg. Co., Albany, N. Y.-Cox Rebound E-Zers and other automobile specialties (D-55 to 57).

Cramp & Sons Ship & Engine Building Co., Philadelphia, Pa.—Cramp's bearing and other metal products (C-43).

Cyclecar Age, New York (D-176).

Daniels, Smalley, Detroit, Mich.-Sly tire holders, Mitchell tool boxes, New Era springs and other specialties (D-4).

Dann Oil Cushion Spring Insert Co., Chicago, Ill.-Lubricating devices for leaf springs (D-27).

Dean Electric Co., Elyria, O.-Elyria-Dean warning signals, speedometers, ignition and other specialties (C-69 to 71).

Detroit Electric Appliance Co., Detroit, Mich. - Deaco starting-lighting-ignition systems (C-104-105).

Detroit Lubricator Co., Detroit, Mich.-Stewart carburetters and Detroit mechanical force feed oilers (D-123).

Detroit Steel Products Co., Detroit, Mich .-Detroit springs (D-178).

Divine Tire Co., Utica, N. Y.—Tires

Dixon Crucible Co., Jos., Jersey City, N. J. -Graphite lubricants (C-38).

Doehler Die-Casting Co., Brooklyn, N. Y. -Babbit-lined bearings, die-cast pumps and other parts of white metal and aluminum (C-92-93).

Donnelly Motor Equipment Co., New York -Ely shock absorbers (D-52-53).

Double Fabric Tire Co., Auburn, Ind.—Interlock inner tires, Vulco and Junion patches, Jumbo boots and other tire specialties (D-78-79).

Dunham, M. L., New York-Seal-joint piston rings (D-32).

Dunlop Wire Wheel Corp., New York-Dunlop wire wheels (D-91-92).

Dykes Co., J. L. G., Chicago, Ill.—Dykes tire reliners (D-83).

Dyneto Electric Co., Syracuse, N. Y.— Dyneto and Entz starters (C-68).

Eavenson & Sons, J., Camden, N. J.—Soaps and polishes (D-46).

Eclipse Machine Co., Elmira, N. Y.— Eclipse two-speed gears, Morrow coaster brakes, Eclipse motorcycle clutches (D

Edison Storage Battery Co., West Orange,

N. J .- Edison storage batteries (C-%

Edmunds & Jones Mfg. Co., Detroit, Mich. -Gas, oil and electric lamps (C-51).

Eiker Carburetter Co., New York-Eiker carburetters (D-69).

Electric Auto-Lite Co., Toledo, O.-Auto-Lite electric lighting, starting and ignition systems (D-86).

Electric Spark Appliance Co., New York-Olympic horns (D-177a).

Electric Storage Battery Co., Philadelphia, Pa.—Exide storage battereies (C-30).

English & Mersick Co., New Haven, Conn. -Concealed hinges (D-107).

Essex Rubber Co., Inc., Trenton, N. J.-Essex red rubber tubes and other tire specialties (D-180).

Eureka Sales Co., New York-Vacuum cleaners (F-3).

Eveland Engineering & Mfg. Co., Philadelphia, Pa.-Electric riveting machines (D --59a).

Faw, J. H., New York-Red Seal priming plugs, Ford valve grinders and lighting sets, oil lamp adapters (D-24a).

Fentress-Newton Mfg. Co., Detroit, Mich. F-N motorcycle accessories (D-117).

Findeisen & Kropf Mfg. Co., Chicago-Rayfield carburetters (C-98-99). Fischer Motor Corp., New York-Magic

motors (D-96-97). Fitzgerald Mfg. Co., Torrington, Conn.-Clero horns (D-36a).

Flentje, Ernst, Cambridge, Mass.-Flentje hydraulic shock absorbers (D-179).

Franklin Mfg. Co., H. H., Syracuse, N. Y .-Die castings (D-217).

Frasse, Peter A., & Co., Inc., New York-Shelby tubing, Poldi tool steel, machinery and supplies (D-43).

Frazer Lubricator Co., Chicago, Ill.—Lubricants, soaps and polishes (D-3la).

Funke Co., Herbert F. L., Inc., New York-Coventry chains, White & Poppe carburetters (D-111).

Gabriel Horn Mfg. Co., Gabriel and Jubilee horns and Gabriel rebound snubbers (C-44).

Garage Equipment Mfg. Co., Milwaukee, Wis.—Gemco automobile parts and accessories (D-82).

Gem Supply Co., Waterbury, Conn.—Chemically treated dusting and polishing cloths (D-7).

Gemmer-Detroit Starter Co., Detroit, Mich -Air starters (D-120).

Globe Machine & Stamping Co., Cleveland, O.—Globe metal tool and battery boxes (C-81).

Golde Patent Mfg. Co., New York-Golde one-man tops (D-181-182).

Gray & Davis, Inc., Boston, Mass.-Gray and Davis lighting and starting systems and lamps (C-26 to 28).

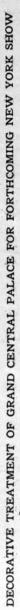
Gray Pneumatic Gear Shift Co., New York

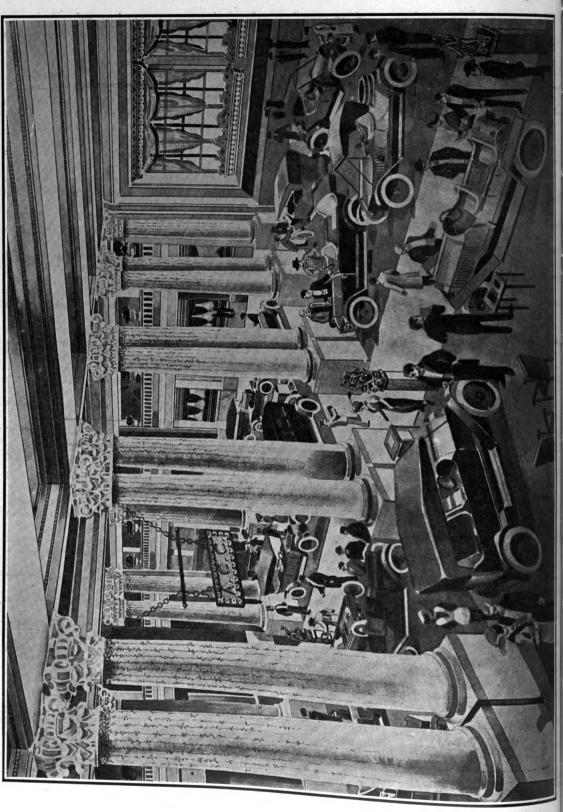
- -Gray pneumatic gearshifting system D-13a).
- ossman Mfg. Co., Emil, Brooklyn, N. Y.
  -Red-Head spark plugs and other autonobile parts and accessories (D—62 to
  4).
- ll-Thompson Co., Hartford, Conn.— Soaps, polishes and tire repair materials D—176a).
- ns Motor Equipment Co., La Crosse, Vis.—Tank and pressure gauges and ther specialties (D—44).
- rris Oil Co., A. W., Providence, R. I.-Harris lubricants and soaps (C-88).
- rtford Machine Screw Co., Hartford, Conn.—Master spark plugs and power ire pumps (D—81).
- rtford Suspension Co., Jersey City, N. J. Truffault Hartford shock absorbers, Hartford electric brake and starting and ighting systems (C—49-50).
- voline Oil Co., New York—Havoline oils (D—47).
- .ws, Geo. A, New York—Panhard lupricants (C-85-86).
- wthorne Mfg. Co., Bridgeport, Conn.—
   Old Sol lamps and fittings (D—206).
- yes Mfg. Co., Detroit, Mich. Pressed steel specialties (C-27).
- inize Electric Co., Lowell, Mass.—Heinze nagnetos and ignition specialties (C—
- :rz & Co., New York—Herz spark plugs, imers, and other ignition specialties, numps, etc. (D—200).
- offecker Co., Boston, Mass.—Hoffecker peedometers (C-61).
- oltzer-Cabot Electric Co., Brookline, Mass.—Holtzer Cabot electric lighting systems, Reacto horns, Newcomb carbuetters (D—143).
- orseless Age Co., New York (D-116).
- ouk Co., George W., Philadelphia, Pa.— Houk wire wheels (D-198).
- oupert Machine Co., New York—Ground nachine work (D—142a).
- A. V. shock absorbers (D-67).
- /draulic Oil Storage Co., New York— Oil storage systems (D-2).
- ternational Acheson Graphite Co., Niagira Falls, N. Y.—Graphite lubricants (C -114).
- ternational Metal Polish Co., Indianapolis, Ind.—Metal polishes (D—36).
- J. M. Shock Absorber Co., Inc., Philadelphia, Pa.—J. M. Shock Absorbers (D—42).
- nney, Steinmetz & Co., Philadelphia, Pa.,—Seamless steel tanks (C-113).
- hns-Manville Co., H. W., New York— J-M asbestos and other products. Jones speedometers, Metzger spark plugs, Carter carburetters, Long horns, and other specialties (D—3).
- nes Electric Starter Co., Chicago, Ill.

- —Jesco starting and lighting systems. (D-33).
- Justice Co., A. R., Philadelphia, Pa.—U-Kan-Plate silver polish (D—60a).
- K. W. Ignition Co., Cleveland, O.—K-W low-tension generators and other lighting and ignition specialties (D—207).
- Kahnweiler's Sons, David, New York—Simplex fire extinguishers (D—54).
- Kales-Haskel Co., Detroit, Mich. (D—177).
   Kellogg Mfg. Co., Rochester, N. Y.—Air pumps and air starting systems (D—199).
- Kemco Electric Mfg. Co., Cleveland, O.— Fan-type electric generators (D—106a).
- Kent Mfg. Works, Atwater, Philadelphia, Pa.—Atwater Kent ignition systems and Monoplex horns (C—87).
- Laidlaw, Wm. R., Jr., New York—Processed upholstering fabrics (D-22).
- Leonard Electric Co., Ward, Bronxville, N. Y.—Ward Leonard electric lighting and starting systems (D—28).
- Leather Tire Goods Co., Niagara Falls, N. Y.—Woodworth treads and other tire specialties (C—62).
- Light Mfg. & Foundry Co., Pottstown, Pa.

  —Automobile alloy castings and gearsets (C-52).
- Link Belt Co., Philadelphia, Pa.—Link belt silent chains (C—111).
- McQuay-Norris Mfg. Co., St. Louis, Mo.— Leak-proof piston rings (D—210).
- Majestic Mfg. Co., Worcester, Mass.—Majestic sidecars and Persons saddles (D—169-170).
- M. & S. Gear Co., Kansas City, Mo.—Muehl spiral differentials (E-8).
- Manufacturers' Foundry Co., Waterbury, Conn.—Automobile castings and parts (C—80).
- Marathon Tire Sales Co. of N. Y., New York—Marathon tires (D-11).
- Marburg Bros., Inc., New York—Mea magnetos and other specialties (D—113 to 115).
- Master Carburetter Distributers, New York
  —Master carburetters (F—9).
- Matisse, C. & A., New York—Lenses, lens mirrors, etc. (E-2).
- Mayo Mfg. Co., Chicago, Ill.—Spark plug pumps and tire gauges (B—213).
- Mechaley Auto Co., Stamford, Conn.—Rex shock absorbers (D-38).
- Metal Shelter Co., New York—Pruden portable garages (D-21).
- Metal Stamping Co., L. I. City, N. Y.—Hub caps, grease cups, wheel pullers, lighting outfits and other specialties (D—74).
- Miller, Chas. E.—Excel jack, M.M. controller and equalizer, and a complete line of supplies and specialties (D-31).
- Miller Rubber Co., Akron, O.—Miller tires (D-1).
- Model Gas Engine Works, Peru, Ind.—Model motors (D-214).
- Mosler & Co., A. R., Mt. Vernon, N. Y .-

- Mosler Spit-Fire spark plugs and other specialties (C-39).
- Motometer Co., Inc., New York—Motometers (D-77).
- Motor, New York (D-73).
- Motor Age, New York (D-205).
- Motorcycling, Chicago (D-144).
- Motor Patents Co., Detroit, Mich.—Speed-ometer drives (D-118).
- Motor World Publishing Co., New York (D-173).
- Motorcycle Publishing Co., New York D-137).
- Motsinger Device Mfg. Co., Lafayette, Ind.
  —Motsinger ignition devices and carburetters (C—101).
- Mutty, L. J., & Co., Boston, Mass.—Numotor cloth and other automobile fabrics (D-208).
- National Coil Co., Lansing, Mich.—National magnetos and other ignition specialties (C.—54).
- National Lead Co., New York—Die-castings, paints and electric wire conduits (D-121).
- National Metal Molding Co., Pittsburgh, Pa.—Auto-Flex conduit (D-41).
- National Rubber Co., St. Louis, Mo.—Narco tire repair material (D-141).
- National Tube Co., Pittsburgh, Pa.—National steel tubing (C—53).
- Newmastic Co., New York—Newmastic rims and tire filler (D-5).
- Niehoff & Co., Paul G., Chicago, Ill.—Tire repair material (D-16a).
- Nonpareil Horn Mfg. Co., New York—Pilot signals (D-112).
- Noonan Tool & Mch. Works, A. S., Rome, N. Y. (E-5).
- North East Electric Co., Rochester, N. Y.— North East electric fighting and starting systems (D—30).
- New York Coil Co., New York—Nyco ignition specialties and other ignition supplies (D—68).
- N. Y. & N. J. Lubricant Co., New York—Non-fluid oils (C-45).
- Overman Tire Co., New York—Overman tires (D—23).
- Pantasote Co., New York—Solitaire tops and pantasote fabrics (C—32-33).
- Peacock, Clarence N., & Co., New York—Ames shock absorbers (D-75).
- Perfection Spring Co., Cleveland, O.—Perfection springs (D—204).
- Perkins-Campbell Co., Cincinnati, O.—Seat covers, vulcanizers, steering rod boots, fan belts and other specialties (D-37).
- Peteler Shock Absorber Co., New York—Shock absorbers (F-10).
- Philadelphia Storage Battery Co., New York—Philadelphia storage batteries (D —84).
- Platt & Washburn Oil Co., New York—Lubricants (D-103).





#### MOTOR WORLD

esto Inter-Rim Co, Boston, Mass.—Presto demountable rims (D—35).

yrene Mfg. Co., New York—Pyrene fire extinguishers (D--61).

osser Thos., & Son, New York—Krupp steel (D—9).

andall-Faichney Co., Boston, Mass.—Bline grease guns, Copley leather-packed guns, Blitz spark plugs, Jericho gas regulator, Webster gasolene gauge and Ranfac vulcanizer thermometer (C.—90).

emy Electric Co., Anderson, Ind.—Remy ignition, lighting and starting systems (C—36).

nineland Machine Works Co., New York —Rhineland ball bearings (D—65-66).

ch Tool Co., Chicago—Tools and valves (D—20).

illy, P., & Son, Newark, N. J.—Fabrics (D—27a).

offy-Grace Corp., New York—Electric amps (D—25).

se Mfg. Co., Philadelphia—Neverout amps and fittings and license brackets C—109).

yal Equipment Co., Bridgeport, Conn.— Brake linings and other automobile accessories and supplies (C—55-56).

shmore Dynamo Works, Plainfield, N. J.

—Rushmore lighting and starting systems and lamps (D—19).

& A. Mfg. Co., Boston, Mass. (F-5).

ger, J. H., & Co., Rochester, N. Y.—J. H. shock absorbers and other automobile specialties (C—102-103).

haefer Sales Corp., Detroit, Mich.—The-Tell-Tale gasolene gauge and Kumalong (D.—49).

hwarz Wheel Co., Philadelphia, Pa.— Wood wheels (C—24).

hrader's Son, A., Brooklyn, N. Y.—Tire valve gauges (C—82-83).

aler Co., C. A., ,Waupun, Wis.—Shaler vulcanizers (C—35).

arrer Patent Top Co., Inc., New York— Sharrer tops (D—177b).

vex Co., New York—Bethlehem spark plugs and polishes (D—178a).

nms Magneto Co., New York—Simms magnetos (C—91).

eno Co., Inc., New York—Sireno horns

nneborn Sons, Inc., L., New York—Soaps, polishes and lubricants (D—98-99). ss Mfg. Co., Brooklyn, N. Y.—Soss invisible hinges and die castings (D—39). acke Machine Co., F. W., Indianapolis,

Ind.—De Luxe motorcycle motors (D—201).

arks-Withington Co., Jackson, Mich.— Sparton horn, fans and other specialtics (C—107).

icer Mfg. Co., Plainfield, N. J.—Spicer universal joints (C—67).

Splitdorf Electrical Co., Newark, N. J.— Splitdorf high- and low-tension magnetos, starting and lighting outfits and other electrical specialties (C—60 and 73).

Springfield Metal Body Co., Springfield, Mass.—Convertible metal bodies (C— 112).

Standard Thermometer Co., Boston, Mass.
—Standard speedometers, Abell tire
pumps, and radiator thermometers (C—
84).

Standard Welding Co., Cleveland, O.— Seamless welded tubing and Stanweld rims (C—34).

Standard Woven Fabric Co., Framingham, Mass.—Multibestos brake lining and friction wheel material (D-175).

Stanley, John T., New York—Soaps and polishes (D—48).

Stevens & Co., New York—Sundries and accessories (D-216).

Stewart-Warner Speedometer Corp., Chicago, Ill.—Stewart and Warner speedometers, and tire pumps (C—29).

Stewart & Co., New York—Ahoo Ford specialties, Allen friction wrenches and Gryndyne valve grinding compound (D —50).

Stromberg Motor Devices Co., Chicago, Ill.
—Stromberg carburetters (C—64-65).

Taylor Mfg. Co., Montclair, N. J.—Portable garages (D—15).

Telesco Co., Le, Baltimore, Md.—Le Telesco shock absorbers (D—26a).

Thermoid Rubber Co., Trenton, N. J.— Thermoid and Nassau tires (D-70 to 72).

Thurber Rotary Starter Co., Detroit, Mich.

—Thurber air starters (D-8).

Tingley, Chas O., & Co., Rahway, N. J.— Vulcanizers and tire repair materials (D—100).

Torbensen Gear & Axle Co., Newark, N. J.

—Torbensen undergeared rear axle assemblies (C—79).

Townsend & Co., S. P., Orange, N. J.— Townsend grease guns (D—95).

Trenton Brass & Machine Co., New York
—Flechter carburetters (D—76).

United & Globe Rubber Mfg. Co., Trenton, N. J.—Globe tires (D—102).

United States Gauge Co., New York City— U. S. tire gauges (D—212).

United States Light & Heating Co., New York City—U. S. L. storage batteries and electric lighting and engine starting systems (C—23-25).

Universal Lubricating Co., Cleveland, O.— Tulc petroleum lubricant (D-34).

Universal Machine Co., Bowling Green, O.—Ball bearings and three-piece universal joints (D-33a).

Universal · Shock Eliminator, Inc., New York City—Universal shock eliminators (D—59).

Vacuum Oil Co., New York City-Mobiloils and lubricants (C-37).

Valentine & Co., New York City-Paints and Valspar varnishes (C-42).

Veeder Mfg. Co., Hartford, Conn.—Veeder odometers, hub odometers, revolution counters (C—40).

Vesta Accumulator Co., Chicago, Ill.— Vesta storage batteries and lighting outfits (C-110).

Voorhees Rubber Mfg. Co., Jersey City, N. J.—Red inner tubes and mechanical rubber goods (D—80).

Waldt, Ralph, New York City—Healey valve seaters, valve spring tools, Koeth's interchangeable tools, Ray socket wrenches, motorists' warm grips, Peerless heaters, Hypo battery connectors (D—209).

Waltham Watch Co., Waltham, Mass.—Automobile clocks (C-74).

Warm Hand Steering Wheel Corp., Poughkeepsie, N. Y.—Electrically warmed wheels (D—35a).

Warner Gear Co., Muncie, Ind.—Clutches, transmissions, Lanchester-Daimler worm drive assemblies (C—31).

Wasson Piston Ring Co., Hoboken, N. J.—Concentric piston rings (D—85).

Wayne Oil Tank & Pump Co., New York City—Storage systems (D—93-94).

Weed Chain Tire Grip Co., New York City
—Weed anti-skid chains, Lyons grips and
Dobbins blow-out repairs (C—63).

Western Electric Co., New York City— —Chauphone telephone system (D—142). Westinghouse Spring Co., New York City— Westinghouse air springs (D—14a).

Westinghouse Machine Co., Pittsburgh, Pa. —Castings (D-14).

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.—Ignition, electric lighting and starting devices (D—18).

Wheeler & Schebler, Indianapolis, Ind.—Schebler carburetters (C-41).

Willard Storage Battery Co., Cleveland, O. —Willard storage batteries (C—75-77).

Willey, C. A., Co., Hunter's Point, N. Y.—Paints and colors (D—25a).

Yale Steel Stamping Co., Oostburg, Wis.
—Yale mufflers (D-15a).

#### MOTORCYCLES.

Aurora Automatic Machinery Co., Chicago, Ill.—Thor motorcycles (D—187-189).

Consolidated Mfg. Co., Toledo, O.—Yale motorcycles (D—183-186).

Davis Sewing Machine Co., Dayton, O.— Dayton motorcycles (D—151-153).

Emblem Mfg. Co., Angola, N. Y.—Emblem motorcycles (D—165-168).

Excelsior Motor Mfg. & Supply Co., Chicago, Ill.—Excelsior motorcycles (D—154-159).

Hendee Mfg. Co., Springfield, Mass.—Indian motorcycles (D—124 to 131).



Harley-Davidson Motor Co., Milwaukee. Wis.-Harley-Davidson motorcycles (D

Henderson Motorcycle Co., Detroit, Mich. -Henderson motorcycles (D-190 to Lavigne Cyclecar Co., Detroit, Mich.-Lavigne cyclecars (D-105).

Miami Cycle & Mfg. Co., Middletown, O .-Merkel motorcycles (D-132 to 136). Pope Mfg. Co., Hartford, Conn.-Pope motorcycles (D-193 to 195).

Reading-Standard Co., Reading, Pa.-R-S motorcycles (D-147 to 150). Schickel Motor Co., Stamford, Com.-Schickel motorcycles (D-171-172). Motorcycle Manufacturers' Association of fice (D-147).

#### MAKING SANTA CLAUS HELP IN THE ADVERTISING

Christmas Atmosphere in Indianapolis Salesroom Window and the Interest It Aroused—Cashing in on the Yuletide Heart Appeal—Saint Nick's Buick's Effective Appearance on the Lincoln Highway



Just because Santa Claus is older than anyone can remember is no reason why he is antiquated as advertising. Christmas is just as old as the old saint, but as long as there is a heart appeal in a Yuletide atmosphere a Christmas window will have its attractiveness.

Many dealers injected a seasonal element into their show windows last week and profited thereby, one of the number being the Indianapolis branch of the Buick Motor Co. The window advertised three things -Santa Claus, the Buick car and the Lincoln Highway. A car was covered with cotton in a manner like unto real snow, the tonneau was loaded down with toys and Santa Claus himself made an up-to-date appearance at the wheel. There was snow over everything and also under nearly everything.

The setting for the car was a section of highway-Lincoln Highway. There was a roadbed of crushed stone-with snow, of course-and alongside was a wire fence and a post upon which was one of the highway's "L" markers. There even were snowbirds on the fence. At one end of the picture-it was picturesque, anyway-was a mile post. the sole piece of Buick advertising. It said, "5 miles to a Buick service station," and drove home its point more effectively than could a ream of reading matter and placards.

#### Schulte's Chalmers Destroyed by Fire.

Frank Schulte, the Cubs' 1911 Chalmers trophy winner, is in the market for another car; also, he will not ask any dealer to accept the old car in trade. She was a good old boat while she lasted, but she went up in a blaze of glory last week.

Schulte used the car in and about his fruit ranch in Georgia, and while driving from Woodbury to the ranch one evening the ear caught fire. Schulte grabbed a fire exinguisher but was obliged to drop it to resuscitate Mrs. Schulte who had fainted.

By the time Schulte could again assume the role of fireman it was too late—and the car is no more.

#### Moravia Men Didn't Pay Indian Oil.

Alleging that Howard K. Perkins and Stanley Balberine, who trade in Moravia, N. Y., as Perkins & Balberine, owe a bill of \$167.37, the Indian Refining Co. filed suit this week in the Supreme Court for New York county; the indebtedness was incurred between January 14 and August 26

#### Toothpick Cure for Rattling Lamps.

Although the disease is by no means common, the lamps that fit into Edi-Swan sock ets occasionally manifest a disconcerting tendency to rattle, and though the slight noise that results cannot ordinarily be heard, the flickering of the lamp that is likely to result will draw attention to the looseness quickly enough. Probably the quickest way to overcome the difficulty is to wedge a tiny piece of a toothpick between the lamp base and the socket, taking care, of course, not to bend the socket.

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#### Vid NO REPAIR-SHOP MUCH BETTER THAN A POOR ONE

## Metropolitan Garageman Who Caters to Storage Alone to Avoid Possible Troubles of Other Than A-1 Shop—Advantages of His Method— Thedford Describes What He Terms His Ideal Garage.

The little boy had found a magnet. So far as outward appearances were concerned it was a very good magnet, such as would delight any little boy. The Boy also had an imagination, and it required only a foot of water in the bathtub and a string rigged over the shower fixture to enable him to recover untold treasures from the watery depths in the form of nails and old hairpins.

The scheme worked nicely except that the magnet was suffering from senile debility, and every time a load of "treasure" was lifted from the water the magnet let go and the "treasure" fell back. On the seventh failure the Little Boy "darned" the magnet and threw it out of the window.

"If I can't have a good one I don't want none!" he exclaimed, which is the very sentiment expressed by Harry Thedford, who manages the Bradhurst Garage at 458 West 146th street, New York City.

#### Garage Without a Repair Department.

Thedford was referring to the statement made in Motor World some weeks previously by G. O. Reynolds, of New Rochelle, N. Y., who said he regarded his repair department as his greatest magnet for the drawing of trade, and from Thedford's viewpoint Reynolds is right, but Thedford goes a step further and says that if a garageman isn't in a position to run a firstclass repair-shop he is many times better off with none at all. Acting upon this theory, there is no repair department connected with the Bradhurst Garage; there are four floors above the basement, and each of them is devoted exclusively to the storing of cars. If a customer wishes repairing done he must go elsewhere.

This may seem like driving trade from the door—Reynolds said his repair department brought trade to him—but Thedford makes the unqualified statement that if his methods are losing him any trade he is quite willing to accept as a counterbalance the greater satisfaction which he derives from his business by concentrating on storage and giving a first-class storage service.

#### No Use for Repair Shops Not A-1.

"A repair business is all right," asserted Thedford, "but if a man can't have the best kind of repair business I think he is much better off with none at all. In our building we have no more storage space than we need; we can get 90 cars in here if we want to. The basement is the only floor which is not entirely devoted to storage; down there we have space which we use for dead storage when we are crowded on the upper floors, and we also permit our customers to take their cars down there if they want to overhaul them themselves.

"We have a couple of mechanics who are capable of giving satisfactory attention to minor mechanical matters and who probably would be able to do a lot more if we had the facilities and cared for that class of business, but our repairing ends right there. A repair-shop certainly is a fine thing if it is the right kind, but the kind we could operate to best advantage to our storage business would not be the kind that I think would do any good.

#### Repair Troubles Big Source of Worry.

"In the garage business repairs are a prolific source of trouble—especially where the repairing facilities are not A1—which is why I prefer not to touch the problem at all. If we had a small shop and attempted to do repair work there would be much of it that we would have to send out, and since I am not a mechanic myself I would have to depend upon an employe to take care on the business and no employe can take the place of a proprietor. The repair-shop is best operated separately from the garage part of the business, and I believe it is best for us to stick to storage and not dabble in something that might not turn out well.

"Trouble over repairs is mostly a question of money, and a question of money is something a man is likely to remember; we have troubles now, such as a man saying 'damn' because we happen to run out of waste just when he wants a handful, but those little things, while they are to be avoided, will not linger with a man as will a dispute over a repair bill or over the fact that the job was poorly done.

#### Advantages of "No Repair Shop" Theory.

"This doing without a repair-shop has advantages rather than disadvantages. If a customer wants his car repaired he has the choice of any repair-shop, whereas if we maintained a shop he would be more or less obliged to ask us to do his repair work. Furthermore, it isn't any particular inconvenience to him not to be able to get his repairing done where he stores; if his car has broken down he can't drive it anyway, so what difference does it make to him whether the car is standing in our shop or is taken to some other shop? He can't have the use of it anyway.

"And if he has trouble with his repairman it doesn't hit back at us and doesn't put us in position to lose a customer. Car owners in their relations with repairmen are peculiar, anyway, in some respects; I know an owner who says he wouldn't have anyone but a certain mechanic touch his car, and another owner, who is equally as competent to judge, considers this repairman the

worst ever—so there you are. For an unmechanical man like myself, repair-shop operation is a problem.

"Were we situated in a very small town where there were no good repair-shops we might be compelled to put in a plant, but in a town large enough to maintain a good shop its absence in a garage may be a good thing."

Doing without a repair-shop is concentration in a way; it permits the company to devote its whole energy to storage and under this system there is greater opportunity to make the storage of a high grade. This concentration in a small way may be but an indication of the trend of Thedford's thoughts, for he said: "I have yet to see my ideal garage."

"What is it?" the Motor World man asked. Thedford smiled.

#### Advocates "Henry Ford Method" Garage.

"I may never see it," he replied, "but I look for a garage that will be operated like the Ford automobile factory. I believe some man can put up a garage that will accommodate two or three hundred cars, run it on a strictly efficiency basis and give storage at a low rate and make money. It will be a big volume of business at a small profit per car.

"The garage business—although I have been in it only about a year—is different than it used to be. When cars first began to be common there were two classes of owners—the sporty man and the wealthy man. The former didn't care what things cost and the wealthy man didn't pay much attention. Today the car owner comes in and, instead of saying, 'Give me so-and-so,' he says, 'Have you got so-and-so, and how much is it?' Cars are owned today by a less wealthy class of men than in former years; they want value for their money.

#### Would Cater to Middle Class Owners.

"It is having this class of car owners in mind that I believe in the possibilities of Henry Ford methods in the garage trade; with an establishment of that type the car owner could be given better service for less money than the smaller garage can afford to give. Of course, the garage would require the best of business management and cost-cutting methods, but these are entirely feasible. As to what price could be given I can't say; the details of the scheme aren't as definite as that with me. We get \$25 and \$35, and it ought to be much less than that."

The realization of this ideal does not seem so improbable when it is stated that Thedford is a member of a family which is one of the large coal dealers in the metropolis; the Thedfords and their business are well known. Whether it is a family ideal

he did not state, but the coal interests are back of this and another garage at 137 West 39th street and may be a greater factor in the garage trade some day.

Before Harry Thedford became manager of the Bradhurst Garage a year ago he was in the National City Bank at 55 Wall street, but he states that he finds his present occupation more to his liking. Managing the Bradhurst establishment has not been a path of roses, however, for one of the institution's chief aims has been to live down the reputation of the former owner. His garage got a "joy-riding" reputation which has been hard to overcome.

#### Diplomatically Jacking Up Prices.

Harry Thedford had not been manager long when he discovered a leak in the plumbing in the basement; he went to a near-by plumber and asked that it be fixed.

"Be right down," said the plumber.

The dford went back and waited 24 hours. Then he called on the plumber again.

"Be right down," said the plumber.

Thedford went back and waited two hours more and then he went to the plumber's office on high gear. The plumber denied that he refused to come because of an unpaid bill left by the former proprietor, but Thedford had to get another plumber to do the work.

In the garage when the Thedford interests took it over were cars on which an extremely low rate of storage was being paid, and there were excellent customers who had gone elsewhere because of their dislike for the previous management. The lowpriced customers were not turned out and they were not peremptorily ordered to "come across" with more money. Instead, they were permitted to stay at the old price while the new manager did everything he could to make them see that under the new management the garage was going to be a place worth patronizing. Some months later, when the matter of storage was taken up with them and the situation explained, nearly every one of them consented to a higher rate.

#### Business Admirably Suited to Partnerships.

The customers who had gone elsewhere under the previous management were not lost sight of; the reputation of the garage spread, as such things will, among the car owners of a neighborhood, and when one of the old customers came in contact with the new management he speedily learned that the "joy-riding" proprietor had departed long since, and some of them came back. It has been difficult to combat the old reputation in its many phases, but that it can be successfully done has been and is being proven.

An extraneous point to repairs and past

reputation is the matter of partnerships in garage operation, on which Thedford  $\dot{k}s$  has opinions.

"This business lends itself admirably to partnerships," he said. "A garage should a open practically 24 hours a day, and the is too long a trick for any one man. It has to have assistance, and no matter by honest or capable this assistant may be it is at his best if he is a partner in the base. No employe can possibly take the place of an owner. Putting too much a sponsibility upon an employe I do not a gard as fair to the employe.

"I know of one man who was trusted? his employer and who was, in turn, trust when the son came into the business, it the son thought so much of the man to he gave him much greater responsible; the result was that the man went wret. Every man has his weak spot; hit in there and he is liable to fall. It has be said that every man has his price, and think it is largely true, although there said that every man has his price, and think it is largely true, although there said to be many exceptions; but to me it sees that the safe way and the fair way to be the safe way and the fair way to be the safe way and the fair way to be the safe way and the fair way to be safe as you can, which is why a parties ship is admirable."

#### Preventing Warping When Hardening

During the process of manufacturing automobile there used to be a consideral number of happenings that were corsered beyond the control of the makers at tain things occurred and there seemed and ing for it but to let them happen and are ward rectify resulting errors. One by many of these "unavoidable" evils have been avoided. One of the most obstitute however, has been the tendency of companions of the control of the most obstitutely large steel parts to warp in the last ening process, which entails labor and pense in the subsequent operations ness sary to restore accuracy of form.

This difficulty has been the subject considerable study and experiment of part of an English concern that special in precision machine tools, and a method has been adopted for prevet warping. Broadly speaking, the ide simply to clamp the part to be hard so that it cannot warp in the bath, suffic pressure being applied to hold it absolute in shape. To this end upper and lower are provided which hold the parts in by pressure from an air cylinder, the rangement being such that the harde liquid is given free access to the surfi requiring it. The lower dies are med on upwardly pressing springs; when dies are brought together the spring sist the pressure until the requisite has been applied, when the springs press and allow the dies and the parhold to descend into the bath below

#### ELECTRIC GRINDERS FOR GARAGE EQUIPMENT

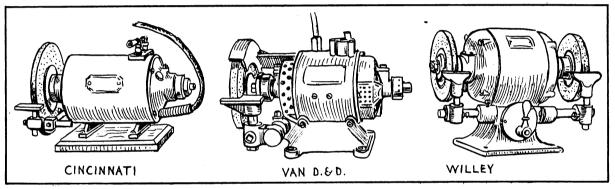
## Single- and Double-Wheel Emery Grinders That are Operated From a Lamp Socket—Advantages of Direct-Driven Shop Tools—Types of Portable and Stationary Apparatus Suitable for any Garage.

Conservation and concentration are two words that appear prominently in the archives of big business. And it is equally as important that they appear in the archives of businesses that are not so big. The small business quite as much as the big business is amenable to the refining influence of efficiency methods, and there are few businesses that will respond more quickly to such methods and show more certain returns, than will the garage business, which too often is more or less slurred over on the

vation of energy they represent and the concentration of equipment they make possible are the most prominent features that argue for their installation.

But drilling is not the only common operation of the ordinary garage that can be done with despatch and with the minimum of cost to the garage proprietor through the aid of electricity. There are very few garages where it is found possible to get along without a grinder of some sort—either a tiny emery wheel for sharpening

commend it to the wideawake garage proprietor. Where a single large motor is used for power purposes there is the expense of overhead shafting and the multitudinous belts required to drive all the various appliances. Again, where the large motor is used to drive but one piece of machinery—say a grinder which is needed but a few minutes and then is shut down—the efficiency of the motor is low, for it is not operating at anywhere near to its rated capacity and hence the cost of operating



DIRECT-DRIVEN ELECTRICALLY-OPERATED GRINDERS THAT MAKE A PLACE FOR THEMSELVES IN ANY GARAGE

general idea that a garage is a necessity and that for that reason it will practically run itself—and support itself.

Such is not the case, as more than one person has discovered; conservation and concentration are necessary, and what with the almost universal use of electricity and its gradually cheapening cost for power purposes, the substitution of machinery for manual labor, which represents conservation, and the use of electricity to operate the machinery directly, which represents concentration, are the two forces that can be expected to start the uplift—they are the Weed chains that permit the wheels of progress to perform useful work instead of merely spinning idly around on the slippery paths to profit-making.

In past issues of the Motor World it has been demonstrated that direct-driven electrically-operated drills—portable types and also those that stand either on the workbench or on the floor—fit into modern gargae equipment with a nicety that spells almost sure profit to those who install them gand use them with intelligence; the conser-

drills and light chisels or a more massive piece of machinery that is capable of the run of grinding operations from drill sharpening to rough smoothing of heavy castings and other heavy work that must be done from time to time.

#### Economy of Separate Motor Drives.

Electricity steps into the breach and offers a ready means of solving a problem that well may be troublesome to the man whose shop resembles a belt forest. For he can install a little grinder or a big one, where he will, provided it is direct driven by electricity; there need be no connection between the grinder and the source of current—which is any lamp socket—other than a couple of thin wires, and wires can be run anywhere. The necessity for providing belt drive and placing the grinder with reference to the overhead shafting rather than with reference to the convenience of those who use the apparatus does not exist.

The practice of providing direct drive for machine tools—a separate motor to each tool—grows apace, and there is much to

the grinder is considerably higher than would be the case if it were driven by its own, very much smaller, motor. Incidentally, the direct-driven electrical tool is a complete unit in itself; the derangement of other units does not affect it; it is started and stopped as it is needed, and little or no current is wasted; its motor operates at approximately its rated capacity and therefore its efficiency is considerably higher than is the efficiency of a large motor doing but a very small proportion of the work it is capable of doing. At the same time, the journal friction in long, overhead shafting is eliminated by the individual motor and the safety of workmen is increased by the absence of belting.

The field of manufacturers of direct-driven electric grinders is a large one and practically without exception each maker produces a number of styles ranging from the tiny single wheel emery grinder to the massive double wheel grinder that stands on its own base and can be used for the heaviest work of the garage or repair-shop. Manifestly, it would not be possible ade-

quately to illustrate and describe every style made by every maker in an article of the length of this one. Hence, those that are covered are among the types that are most suitable for the use of the average garage proprietor or repair-shop man.

#### Miniature Grinder for Bench Use.

To start at the beginning, which means to start with small things and work up to larger ones, the Carver bench grinder that is illustrated herewith and that is produced by the American Electric Tool Co., of West Newton, Mass., is at once one of the smallest and the neatest devices of its kind; small indeed must be the shop where no place can be found for it on one of the workbenches. It is designed, of course, only for very light work such as the sharpening of drills and light chisels and so forth; yet despite this fact it is heavy enough to stand on a bench without "walking away with itself" even if it is not fastened down; which makes it easy to move it about from place to place. It weighs complete just 35 pounds. The size of the grinding wheel is 6 x 3/8 inches and the normal speed is 3,500 revolutions a minute. It will operate on either one-, two- or three-phase alternating current up to 220 volts and 60 cycles.

Outside of its compactness, which is a sterling virtue where space is restricted, the tool has a number of other distinctive features all its own. Thus, for instance, the base is plenty large enough to protect both the motor and the wheel from injury that might result from heavy stock rolling against it on the bench. The tool rest is large and fits snugly around two sides and the face of the wheel, adjustment being provided by means of a bolt in the base. Another feature that ought to prove a genuine boon is that the water pot is cast integral with the base so that a twist of the wrist inserts the end of the hot tool in the cooling liquid. The control switch also sets into a recess in the base and, as there are no exposed connections, it is impossible-as remote as the possibility may be-for the workman to receive a gentle jolt from bare wires. Needless to add, the motor is enclosed to exclude "grindings" and provision to take up for wear is made in the bronze bearings. The tool is sent out with a wheel, 10 feet of connecting cable and a separable attachment plug.

#### Motors That Are Fully Enclosed.

The Cincinnati single wheel bench grinder, which is produced by the Cincinnati Electrical Tool Co.. of the Ohio city for which it is named, is even smaller than the Carver, though it is just as much a glutton for work. The weight of the whole tool complete in this case is only 15 pounds, though the motor, which is rated at 1/4

horsepower, is plenty powerful enough to "swing" a four-inch wheel with a threeeighths inch face; the wheel is provided with it. The normal speed is 4,200 revolutions a minute. Two styles are produced, though they differ not a bit in appearance; one operates on alternating current of any

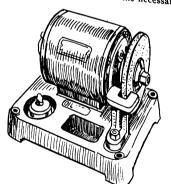
of the usual characteristics and the other

U. S. HEAVY BENCH TYPE

operates on direct current. The motor, of course, is fully enclosed and is dirtproof, and where specified can be equipped with an extended spindle. The controlling switch, as the picture makes plain, is mounted on top of the motor casing, where it is instantly accessible and its use to shut the machine down is encouraged, and the equipment includes the usual flexible cord and attachment plug.

#### Grinders May Also Be Buffers.

It is scarcely necessary to point out that the field of usefulness of any of these grinders can be greatly widened by the substitution of buffing and polishing wheels for the grinding wheels; generally it is quite a simple matter to make the necessary



CARVER BENCH GRINDER

change in wheels and the operation can be performed in a few minutes.

The Van Dorn & Dutton "hard service" single wheel bench grinder, produced by the Cleveland (O.) firm of that name, is slightly larger than either of the other two, inasmuch as it will "swing" a six-inch wheel with a 3%-inch face, and differs in other respects as well. The weight of the tool is

30 pounds and the overall dimensions z 5,4 x 131/2 inches; the normal speed is the revolutions a minute. The grinder operate on direct current of either 110 or 220 voice Although the motor in the tool is so work that the temperature rise is controlled at cannot climb very high, a ventilating in nevertheless is incorporated in the mour by way of positively ensuring cool open tion. One of the distinctive features of the tool is that all necessary adjustments at be made from the outside; lubrication is carried on automatically from a large rest voir in the base which requires filling at at long intervals. The operating switch: mounted at the top of the motor ass and the usual cord and attachment pla form part of the equipment. The motors rated at one-third horsepower.

#### Motors That Carry Pair of Wheek

For a greater range of work than orveniently can be handled with a size
wheel grinder, it is a comparatively size
matter to place a wheel on either end oit
motor armature shaft, and this is what
Jas. Clark, Jr., Electric Co., of Louista
Ky., and a number of other makers of sed
devices have done. The Clark company produces electric tools which are known of
the trade name "Willey," and several syche
are illustrated herewith.

In the two-wheel "Willey" bench grinds that is shown by the accompanying picter the motor is completely enclosed and mounted integral with the base which turn, encloses the controlling switch. not ing of which except the handle, directly the operator's fingers, is visible. To s the current requirements of different local ties, the motor may be had wound for either direct or alternating current of all the voltages and cycles. The tool is made two sizes, the smaller of which is powers enough to operate two 8 x 34-inch wheels the larger is fitted with two wheels met uring 12 x 1 inches, the normal speed ing 1,600 revolutions a minute; the small grinder operates at 2,400 revolutions. heights of the two sizes are 141/2 and 1 inches, respectively, and their weights 105 and 200 pounds. The maximum hor Power of the smaller is one-half, and the larger, one. Where specified, an " tension spindle can be supplied in place it one wheel to convert the tool into a co bined buffer and grinder.

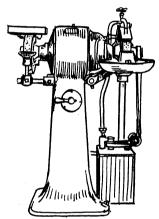
#### Heavy Machines for Heavy Work

The United States Electrical Tool Co. Cincinnati, O., is another concern that foliates direct-driven grinders in great for ety, the type that is illustrated herewith ing particularly suitable for the averagarage, where a considerable volume work is turned out. The machine is slice.

ly larger than any of the others and will "swing" two 12 x 1½-inch wheels, the motor being rated at two horsepower. Either alternating or direct current may be used though one or the other must be specified in ordering; the overall height of the grinder is 18 inches and the normal speed is 2,050 revolutions a minute; the weight is 185 pounds. Both grinding wheels are fitted with proper guards and the motor is fully enclosed and dirt-proof.

#### Stationary Grinders for Large Shops.

Grinders designed for really heavy work invariably are mounted solidly upon their own bases and differ principally in this respect from the lighter machines intended for lighter work. In the Cincinnati two-wheel floor grinder, for instance, the base is a substantial casting to which the grinder is bolted in the manner shown in the ac-



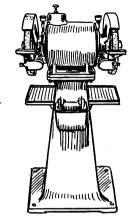
WILLEY WET AND DRY GRINDER

companying illustration. Three sizes in this particular style are produced, the motors rating one, two and three horsepower, respectively, and the complete machines weighing 175, 290 and 390 pounds. The smallest size is fitted with two wheels measuring 10 x 1 inch and the normal speed is 2,000 revolutions; the next larger size carries two wheels measuring 12 x 11/2 inches and the speed is 1,600; the largest size has grinding wheels measuring 14 x 2 inches and the speed is 1,400 revolutions. Motors may be wound for either direct or alternating current, though the alternating current machines are arranged to operate only on two- and three-phase circuits.

Still larger in size, the U. S. two-wheel floor grinder suggests its suitability for even the heaviest kind of grinding work that any garage proprietor may expect to do; it is a machine, in fact, that is more suitable for a really large repair-shop than for a garage other than a very large one, though in this respect it should be remembered that in a great many cases small, light work can be done on a fairly large

grinder, whereas it is utterly impossible to do heavy work on a light bench machine designed primarily for such work as sharpening drills and chisels. In other words, it is wise to look far ahead in the purchase of shop equipment and to anticipate with great care the future needs of the shop when the business shall have grown, perhaps, to twice its size.

But to get back to the U. S. floor grinder: It is made in two sizes, one having a motor



CINCINNATI TWIN GRINDER

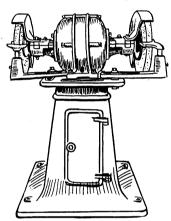
rated at three horsepower and the other with a motor rated at five horsepower; the weight of the smaller is 575 pounds and of the larger, 875 pounds. The smaller of the two will "swing" a pair of emery wheels measuring 12 x 2 inches at 1,800 revolutions a minute; the larger carries a pair of 18 x 3-inch wheels and the normal speed is 1,120 revolutions. The emery wheels, however, are not supplied with the grinders, nor are the tool rests. In the case of the smaller grinder, the floor space occupied is 26 x 27 inches, and with the larger, 28 x 30 inches; the height from the floor to the center of the arbor in both cases is 36 inches. When wound for alternating current, provision can be made for operation on 25 cycles (in this case the normal speed of the smaller model becomes 1,420 revolutions a minute) or 60 cycles, either two- or threephase: direct current motors can be wound for either 110 or 220 volts.

#### Detachable Wet Grinding Apparatus.

In the average garage or repair-shop it is not often necessary to do wet grinding; work of the kind is more likely to fall to the lot of the repair-shop where actual building operations are carried on. But where there is necessity for wet grinding, even at long intervals, several makers, among them the Clark company, supply attachments for their standard tools, which convert them into wet grinders. In the "Willey" two-wheel grinder that is illustrated herewith, for instance, one of the

wheels is fitted with the wet grinding attachment. It consists, briefly, of a hood for the wheel, with a splash bowl, the water reservoir and settling chamber at the bottom, the pump and the necessary piping. As the illustration makes plain, the pump, which is of the centrifugal type, is driven by belt from the main motor shaft; the pump, by the way, is distinctive in that it has no bearings under water, nor is it fitted with any stuffing boxes. The whole attachment is so constructed that it can be attached or detached quite easily in a short time.

As regards the rest of the "Willey" grinder, it is of the regulation two-wheel type, though it differs from others in that the base and the motor casing are made integral. The motor is rated at two horsepower and is powerful enough to operate two 12 x 2-inch wheels, the normal speed being 1,-



U. S. TWIN FLOOR MODEL

600 revolutions a minute. The weight of the machine is 745 pounds and the floor space necessary for it is 32 x 19 inches, the height overall being 50 inches. As is the case with nearly all the other machines, the motor may be wound for either 110 or 220 direct or alternating current, two- or three-phase.

#### Curing Rattles That Infest Torque Arms.

After a car has been in use for some time a sharp, metallic rattle may develop beneath the body, and nine times out of the proverbial ten it can be traced to the ball and socket joint of the torsion arm-provided one is used, of course. Where the support for such a joint is riveted to the cross frame member the rivet occasionally works loose and though the strength of the part is scarcely impaired enough to cause a catastrophe, a rattle is sure to result. In such cases it is a good plan to chip the rivet off with a cold chisel and a hammer and to substitute for it a bolt and nut. Needless to add, the nut must be fastened in place either by means of a cotter key or with the aid of a nut lock that it is known will hold.

### TIME TO SEE PROSPECTS IS NOW; NOT TOMORROW

The Four "Begging Devils" That Ruin Sales Chances by Urging Procrastination—How Salesmen Are Prone to Delay Calls.

What, or rather, when, is the psychological moment to press the sales argument on a prospect? What time is most propitious to a furthering of the salesman's selling talk? There must be a psychological moment, or something akin to it-a time when the prospect's mind is in its most receptive condition, or a salesman's mind is in the best condition to seize the opportunities presented to it, and nine times out of ten it is now, right this very moment. But the whole trouble is there are four little devils that argue so skillfully and so persistently for postponements that the psychological moment never arrives. The food of these four, hungry little devils, says Printer's Ink, is prospect-hunting time.

One hungry little devil is about o' mornings. He mounts the shoulder of the salesman and whispers:

"No use trying to see your first man before nine-thirty—got to give him time to open his mail."

And if you so much as waver for an instant he straightway devours the front end of your precious morning.

The next little begging devil's idea of a dainty morsel is a toothsome midday.

"It is now a quarter to twelve," he adroitly starts. "If you see a man now he is liable to be going to lunch any minute. and he'll hustle you through to get rid of you and get out."

If you agree to this proposition, he waits until he get you comfortably seated at luncheon, or in a hotel lobby, and then suggests:

"You can't see 'em before two o'clock now—they won't be back from lunch."

And before your very eyes he gnaws two and one-quarter perfectly good hours right out of the very middle of your priceless day. And maybe, too. he nibbles off the half-hour between 2 and 2:30 by way of dessert, before he leaves.

As the first suspicion of shadow crosses the afternoon light of these winter days a third little devil, lean and ravenous, accosts you.

"It is getting dusk," he mournfully chants, "you can't start a new talk now. It's getting dark. Your man won't be in a mood to listen."

And, before you know it, he has gobbled the entire end of your afternoon.

Before these three little begging devils

are satisfied your working hours are from twelve to one with an hour for lunch—or, rather, from twelve to two, with two hours for lunch.

The fourth little devil feeds only at long intervals, after the manner of a snake, and then, like a snake, gorges himself. His food is Saturdays.

"You can't do anything on Saturday," he pleads, "it's a short day and they're too busy to listen."

And so, without even allowing you to start out, he swallows your Saturday whole.

And the terrible part of it is that the

And the terrible part of it is that they're such plausible little devils.

If you don't watch out you'll find yourself accepting their say-so as the gospel truth. And they can can find for you every single hour of the day a seemingly good leason why you should not work just then.

But they're liars-every one.

If you want to prove it just sally forth some bright morning and find out how many men get down to their offices at eight or eight-thirty. Progressive business men cannot transact their business in a few fagends of hours in a day, any more than you can. And if a man is at his office at eight or eight-thirty in the morning, it's the best indication in the world that he's a good prospect for you. He's a hustler. He's a "get-there" man.

And he can be turned aside from his mail by something that interests him, as well as he can be turned aside from anything else and furthermore, progressive business men are not cluttering themselves up these days with the opening of routine mail.

Then just try going after a few prospects between twelve and two. You may find a man or two of them out, of course. But all you have to do in that event is to go on to the next fellow. If you find him in it will prove a splendid time for a thorough and uninterrupted presentation. A man is alway ready, between twelve and two, to relax and let up on his work if an excuse to do so is presented. Callers between twelve and two are few and far between, and your chances of not being interrupted are much better than any other time of the day.

You can see them before two. If you found a man out between twelve and one o'clock you may be sure that you will find him in between one and two. And you'll be finding him, after he's had a good, comfortable meal and is in a mood to sit back, comfort himself with his after-dinner cigar and listen.

That dusk argument needs no disproving. A man who has been busy in his office all day—and the men that you will sell are all busy men—doesn't know whether it's dark or light outside. And the chances are that he has been using artificial light all day, anyhow.

And as for that "Saturday" devil, he hasn't a leg to stand on. Just you go out and try it.

There will be those who will insist ou trying to prove that, as applied to their territory, these little devils are right.

"You see," one of them says, "what you say is true, generally speaking; but in my territory, now, things are different—"

But hesitate before you "pull" any of that "different" stuff; for you will immediately class yourself with the man who tells you that "his business is different."

#### Ball Bearing Facts and Figures.

For the use of designers and others who have to figure on the capacities of ball bearings in order to be sure that they are employing bearings of the proper sizes, the Gurney Ball Bearing Co., of Jamestown N. Y., has compiled and issued to the trade a specification sheet of its bearings that is so complete that it is difficult to suggest anything that could be added.

The sheet is a large one, suitable for hanging on the wall, and gives not only the designating number of each bearing, inside and outside diameters in inches and millimeters, width in inches and millimeters, radius, and number of balls, but the ratel load in pounds, speeds permissible at ratel load, and price. The bearings described range from a little one with a bore of a shade more than half an inch to a huge affair that fits on a shaft 4.33 inches in diameter and has a maximum load capacity of 30,000 pounds, having 11 balls 2 5/16 inches in diameter.

The ratings given are described as the absolute maximum for the loads given, under the most favorable conditions. It is intended that the engineer shall modify the figures to suit his particular conditions, and in order that he may do so a table is given which enables him to figure out capacity at any speed compared with the maximum speed given in the table.

#### Cleaning Clogged Acetylene Burners.

One simple method of clearing minute specks of carbon or dust from the tiny holes in acetylene burners is to hold the burner over the end of the tube from the tire pump; one or two lusty strokes generally suffices to clean out the obstruction entirely.

An alternative method, but one which is fraught with the danger of making worst something already bad, is to hold the burner over an open priming cock in the top of a cylinder while the motor is running. The cock should be left open a minute or two before the operation is attempted to permit particles of carbon to be blown out; other wise they may lodge in the burner and refuse to be dislodged.

#### HIGH COMPRESSION MOTORS FOR AMERICAN ROADS

## Why Foreign Type High-Speed Motors are Unsatisfactory When Handled Like Slow-Speed Engines—Separate Tests of Compression Effects That Led to Identical Conclusions—Compression One of Many Factors.

Over on the "other side," where nearly all that was good and proper in automobile design and construction used to come from -note particularly the "used to"-there is the strongest kind of a leaning, as almost everybody knows, toward motors with long stroke and small bore, rather high compression and light reciprocating parts, running normally at high speeds and incapable of developing normal power when running at what are considered normal speeds over here. It can be said for these highly-developed motors that they develop high power in proportion to their cylinder capacities, due, of course, to the high rotative speed which is permitted by the light and well-balanced reciprocating parts and the excellent and painstaking workmanship that is made possible by the prices of these machines; and that they run smoothly and sweetly when properly handled.

#### Roads Influence Motor Handling.

The question often has arisen as to why the same type of motor has not become popular in this country; unquestionably the demand could be met should it arise. But the typical American motor remains a comparatively large, slow-speed motor, built rather to stick to its work when the speed has been pulled down by hard "going" and to deliver its maximum power at a reasonable speed than to turn up a large number of revolutions per minute and depend upon speed for power.

It would appear that one of the reasons, whether or not it is the most important, for the difference in motor types is the difference in road conditions. Foreign roads are so notably good that visitors are in the habit of comparing their poor roads with our good ones, not always to the credit of the latter. Such road conditions as exist abroad permit a kind of driving that is not possible here except on short stretches, and it is a matter of little or no difficulty to keep a high-powered motor turning up normally all the time. Theoretically, it is possible to do the same thing on our bad roads by more or less constant shifting of gears; but in practice Americans who have become accustomed to motors that will pull hard at moderate speeds find it rather irksome to watch the gears so carefully, and are prone to let the revolution rate of a high-speed engine

drop too low. This causes trouble such as is usual in any motor that is allowed to slow down too much; but it is considerably aggravated when, as often is the case, the compression is high, and the motor develops a severe pounding at speeds that, to the driver accustomed to a slow-speed motor, do not seem to warrant it.

#### Compression Not the Only Factor.

It goes without saying that this is unnecessary, and that the motor should not be so handled; but it is none the less true that they have been so handled and that if an objection becomes rooted, whether it is founded on reason or not, it has a strong effect on the standing of the motor, and a motor that is under the shadow of a prejudice has little chance to make headway against a motor that has earned popular confidence and has inculcated a method of handling that is difficult to change.

In this connection it may not be out of place to bring up the point that high compression, of itself, is by no means an indication of high power; that is to say, it does not necessarily follow that increasing the compression of a motor will increase its power. It has not infrequently been asked why any small motor cannot be made more powerful, and so be brought into the same category with foreign high-speed motors, by increasing the compression and running up the speed. There are many reasons why this sort of thing is entirely out of the question. High speed calls for different treatment of the motor throughout. The manifold design, the valve areas, the cam contours, the timing-these are only a few of the considerations that enter into the calculation. The valves of foreign highspeed motors are extremely large, as compared with ordinary valves, and the cams and timing are peculiar and involve special calculation. Then there is the question of balance, of the weight of reciprocating parts, of lubrication, and so on, until the compression factor, important though it undeniably is in conjunction with other factors, becomes almost insignificant.

#### High and Low Pressure Tricks.

The inadequacy of compression increase alone as a means of "boosting" the power output of a motor is clearly indicated by a series of tests conducted at Purdue University some time ago. The car employed was fitted with a four-cylinder motor with cylinders measuring 45% x 5½ inches; 40 horse-power was the rating. The rear wheels of the car were connected up to a dynamometer. The dynamometer pull was maintained constant at 200 pounds and the speed was varied during the tests to correspond with road speeds varying from 20 to 35 miles an hour.

Comparative tests of high and low compression were made by inserting plates under the cylinders to raise them and so increase the piston clearance and decrease the compression. The high compression, normal for that particular motor, was 100 pounds to the square inch-decidedly an unusual figure-and the low compression was 80 pounds, even that being well above the average for this country. In every case not only was the horsepower higher with the lower compression, but the car ran the equivalent of a greater number of miles per gallon of gasolene. The speeds, power delivered at high and low compression and number of miles per gallon at high and low compression are given in the following table:

Approximate Horsepower.				er Gallon
Speed, m.p.h.	High Comp'n.	Low Comp'n.	High Comp'n.	Low Comp'n.
20	10.2	10.8	9.6	12.0
25	12.9	1 <b>3</b> .6	12.9	13.4
30	14.9	15.7	12.9	14.9
35	16.4	18.6	13.6	15.8

Even the lowest of the pressures tested in this engine—that is, 80 pounds to the square inch—is quite a high pressure as compressions go, and it might not be unreasonable to believe that the results might have been different if the tests had been made with pressures more nearly approximating general average practice in this respect.

Such was the idea of an English engineer, who, therefore, made some tests of his own with a motor, also having four cylinders, with a bore and stroke of 3 13/16 inches and 3% inches, respectively, rated at 23.5 horsepower. The normal compression of this motor is 65 pounds, which is a pressure in common use. Instead of lowering the compression in this motor, it was raised to 75 pounds for the alternative tests. While the conditions under which the tests were

made do not correspond in detail to the conditions governing the Purdue tests, the results are such as to corroborate the first series, as the following table clearly indirates:

Engine Revs.	H. P. High Comp'n.	Low Comp'r
<b>750</b>	10.1	11.9
1000	14.0	15.7
1250	16.4	18.0
1500	20.6	22.2
1750	24.2	25.6
2000	27.5	28.6

Of course, the purely scientific aspect of these matters is of such a character as would make a printed page look like an extract from a text-book on higher mathematics. The foregoing, however, may be of interest to those who wonder why motor manufacturers do not just tighten up a little on their compression spaces and so increase power outputs, or who perhaps believe that this is just what is done in some cases.

#### Goes 4,000 Miles to Pay Speeding Fine.

That a man might travel 4,000 miles to escape court and a fine is seemingly compatible with human nature, but traveling that distance to pay a fine of \$100 for speeding is so exceptional as to be noteworthy; it happened, however, Theodore P. Davis, of Austin, Tex., being the man who achieved this distinction.

Davis, who graduated from Yale in June, was arrested on Commencement Day, when the car he was driving struck Mary Reardon and injured her severely; he was taken to court in New Haven, where the hearing was adjourned several times and, following the last adjournment, Davis went to his home in Texas. But when the case was called last week he was on hand and paid \$100 and costs, after which he started on his return journey of 2,000 miles. The hearing lasted for the interminable time of three minutes.

#### Mechanicians Now Must Be Registered.

Extending its control over contest matters in general and over road and track events that go for more than 50 miles in particular, the contest board of the American Automobile Association at its last meeting ruled that hereafter mechanicians as well as drivers must be registered. Entry blanks for the purpose can be obtained at the A. A. A. headquarters, 437 Fifth avenue, New York City, the registration fee being \$2 a year. At the same time, the registration fee for racing drivers was increased from \$2 to \$3 and in addition to the usual identification card each driver registering hereafter will be supplied with a lapel button embodying the well-known A. A. A. wheel design and also bearing on its face the words "Registered Racing Driver." Mechanicians also receive buttons.

#### OHIO'S OBNOXIOUS LICENSE

### LEW GETS FINAL KNOCKOUT

Having Administered a Previous "Jolt" to High-Handed Executive, Court Overthrows Statute—A Revenue Tax and Not Legal.

That Warnes law, which Governor Cox of Ohio wielded lustily in the faces of Ohio motorists with the statement that he was going to make them pay a fine big automobile tax, got its final knockout last week; Judge Kinkhead, of the Franklin County Court of Common Pleas, sitting in Columbus, a month ago overruled a demurrer by the State to an application for an injunction against the law, and last week he administered a final quietus.

The law, which would have gone into effect today had not the Ohio Automobile Association filed its suit, would have imposed automobile license fees ranging from \$5 to \$50 and aggregating about \$1,000.000; when Judge Kinkhead expressed his opinion of the law upon overruling the demurrer and said the law was for revenue rather than regulatory, the State changed the tenor of its argument and said the measure was an excise tax and therefore constitutional. But this did not appeal to the court who held that it is improper to tack an excise "rider" onto a regulatory measure and that the law is too unreasonable to be an excise tax

"The line of demarcation between the limits of police regulation and the purpose of the imposition of an excise tax finds apt illustration in an observance of the two classes of legislation," the judge said. "The license fee or tax may be large enough to recompense the government for the additional burden, trouble and expense in regulating the dangerous agency for the public welfare.

"On the other hand, an excise tax has for its primary and sole purpose the raising of general revenue. And its limitation is marked by the value of the privilege or franchise granted by the government. If the license tax goes beyond the reasonable expense of regulation so as to disclose a manifest purpose to raise revenue the law is invalid. If the excise tax goes beyond the reasonable value of the privilege, use and enjoyment granted by the State so as to infringe upon the principle of equal protection and benefit, the same is invalid.

"The imposition of a tax to such an extent that a large surplus will be accumulated," he said, "one-third of which may be considered to be the reasonable value of the privilege and two-thirds of which is to be applied to another and different purpose

having no special relation to the benefit, violates the constitutional provision respecting equality of protection and benefit to the people.

#### Cleveland Opposes Car Fender Law.

Motorists in Cleveland, O., are endeavoring to prevent the passage by the City Council of an ordinance requiring fenders on trucks; they claim the fender is mecessary and does not meet the purpox which the ordinance attempts to accomplish. It is claimed that a truck can be stopped within its own length when going at 12 miles an hour and that, anyway, injuries in nearly every instance are from being struck and thrown, not run over.

The Cleveland Automobile Club, which is leading the opposition, has submitted to the council letters from Howard E. Coffin and C. P. Norton, of Detroit, Hudson and Packard men, respectively, stating that they do not favor the scheme after having winnessed Detroit's attempt to prevent accidents by the use of fenders.

The letters state that while there is an intention in the Detroit law to have the fenders kept down to the lowest point-namely, six inches from the ground, in actual practice the fenders usually are kept raised to their maximum height, ten inches in order to clear manholes and bad spots in streets. When kept ten inches above the ground, fenders are of no avail in preventing accidents, it is said.

The letters further state most people hun by automobiles receive their injuries by being struck and not by being run over.

Coffin's letter states that a better solution of the matter would be obtained by adopting the French custom of holding some individual responsible in the case of accidents. In that country, he says, if an injury to a pedestrian is found to be the fault of the pedestrian the pedestrian alone suffers. If the driver of the car is at fault he is punished.

In America, says Coffin, it is the custom to do nothing until a series of accidents aggravates the situation. Fenders on trucks will not protect the pedestrian from the pedestrian's own carelessness.

#### Contest Board to Consider Cyclecar Rules

Embryonic movements in the cyclear field having reached the stage where contests among drivers of such vehicles appear on the horizon, the contest board of the American Automobile Association has decided that in requesting from motor car manufacturers suggestions regarding modifications of the 1914 contest rules, request also will be made for suggestions covering classifications and rules governing cyclear contests. The purpose is to embody such suggestions, if feasible, in the 1914 rules.

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1,071,066. Vehicle Canopy. Allen Loomis. Detroit. Mich., assignor to Packard Motor Car Company, Detroit, Mich., a Corporation of Michigan, Filed Mar. 1911. Serial No. 617,320. (Movable fabric top with movable back of glass.) One claim.

1,071.068. Lubricating System. Harvey F. Maranville, Akron, Ohio, assignor to The Perfection Spring Company, Cleveland, Ohio, a Corporation of Ohio. Filed Dec. 12, 1910. Serial No. 596,870. (Pressure system with means for separating oil from gas.) 26 claime

1,071,071. Rubber Tire Tread. Harry L. McLaren, Wis., assignor to Racine Rubber Co., Racine, Wis., a corporation of Wisconsin. Filed Sept. 5, 1912. Serial No. 718,611. (Rubber tread with circumferentially arranged rubber studs,) 1 claim.

1,071,112. Means for Lubricating Valves. Eugene Henri Tartrais, Montmorency, France. Filed June 15, 1912. Serial No. 703,853. (Pressure system for lubricating rotary valve.) 2 claims

1,071,153. Spring Wheel. Edward J. Glackin, Chi-Filed Oct. 6, 1909. Serial No. 521,308. (Double flat springs circumferentially arranged.) 7 claims.

1,071,169. Safety Appliance Lock for Automobiles and the Like. Jacob H. Mertz and Elmer Schatz, Washington, D. C.; said Mertz assignor to said Schatz. Filed March 11, 1912. Serial No. 682,902. (Plug ignition lock switch.) 3 claims.

1,071,206. Demountable Tire-Rim for Vehicle Wheels. Martin H. Collom, Denver, Col., assignor to The Collom Demountable Rim Mfg. Co., Denver, Col., a corporation of Colorado. Filed April 29, 1912. Serial No. 693,966. (Collapsible inner rim.) 11 clains

1,071,229. Elastic Tire for Vehicle Wheels. Herman Philippe Haas, Brussels, Belgium. Filed Nov. 1, 1911. Serial No. 657,906. (Continuous row of spherical blocks.) 1 claim.

1,071,260. Internal Combustion Engine Starter. Thomas E. Plater and Edward B. Rees, Mo. Filed Nov. 11, 1909. Serial No. 527,495. (Cylinder pressure device.) 1 claim.

1,071,265. Tilting Auto Truck. Gustav Schlatter, Arbon, Switzerland, Filed Sept. 19, 1912. Serial No. 721,131. (Hand-operated mechanism for tilting the body.) 5 claims.

1,071,275. Motor Fire Engine. Chastian Taurman, Cincinnati, O. Filed June 4, 1912. Serial No. 701, 603. (Pump driven by vehicle engine.) 2 claims.

1,071,288. Resilient Wheel. Marcus Young, Port Huron, Mich. Filed Aug. 17, 1912. Serial No. 715, 537. (Resilient medium at base of spokes.) 4 claims.

1,071,314. Wheel. Benjamin Barnett Hardin, Clairemont, Tex., assignor of one-half to Ben C. Hardin, Clairemont, Tex. Filed April 8, 1911. Serial (Circumferentially arranged flat springs.) 2 claims.

1,071,335. Vehicle Frame. Chas. J. Pembroke, Rochester, N. Y. Filed April 5, 1906. Serial No. 310,035. (Compound frame for special spring suspension system.) 2 claims.

1,071,348. Vehicle. Richard H. Rice, Lynn, Mass. Filed March 15, 1912. Serial No. 684,026. (Receptacle back of rear seat into which top folds.) 8

1,071,378. Tire Saver. Le Roy Willour, Ashland, 1,071,378. The Saver. Le Roy Willour, Ashland, O., assignor to The Ashland Mfg. Co., Ashland, O., a corporation of Ohio. Filed Jan. 6, 1913. Serial No. 740,509. (Jack for taking weight off tires.) 3

1,071,392. Reversible Two-Cycle Internal Combustion Engine. Hans Theodor Bruns, Nuremberg, Germany. Filed Dec. 23, 1909. Serial No. 534,588. (Ignition reversing system.) 1 claim.

1,071,418. Non-Skidding Device. Harry J. Herns-

heim, Pleasant Prairie, Wis. Filed Oct. 8, 1912. Serial No. 724,574. (Cross-bar device). 1 claim.

1,071,438. Tire. Wilhelm C. Kroegher, Bellevue, Pa. Filed Dec. 28, 1912. Serial No. 739,077. (Solid tire with V-shaped tread and metal reenforcement.) 1 claim.

1,071,444. Engine Starter. Alvan O. Levick and William H. Hussey. Peabody, Mass. Filed Jan. 20, 1912. Serial No. 672,392. (Anti-kick starting crank.) 5 claims

1,071,446. Fluid Pressure Device. Richard Liebau, Watervliet, N. Y., assignor to The Westinghouse Air Spring Co., a corporation of Pennsylvania, Filed Feb. 25, 1910, Serial No. 545,956. Renewed Feb. 15, 1913. Serial No. 748,707. (Pneumatic shock-absorber.) 14 claims

1,071,463. Shock-Absorber. George B. Reid, Aberdeen, Wash. Filed March 27, 1913. Serial No. 757, 230. (Rebound check with friction device.) 2 claims.

1,071,485. Top-Support. George R. Wadsworth, Cleveland, O., assignor to The Peerless Motor Car Co., Cleveland, O., a corporation of Ohio. Filed Nov. 8, 1911. Serial No. 659,101. (Frame and fastening for folding top.) 1 claim.

1.071,518. Shock Absorber. Townson Hand, Orlando, Fla. Filed June 3, 1913. Serial No. 771,385. (Spring cylinder shock absorber.) 3 claims.

1,071,525. Automobile Signal. Harold M. Mac-Causland, Worcester, Mass. Filed March 8, 1912. Serial No. 682,497. (Visible signal device.) 3 claims.

1,071,528. Muffler. Nathaniel Rapp, Toledo, O., School to The Commerce Trust Co., Toledo, O. Filed Oct. 28, 1912. Serial No. 728,020. (Muffler with yieldably closed openings for the escape of gas.) 15 claims.

1,071,543. Spring Wheel. Grosvenor S. Andrus, Range, Ore. Filed Nov. 2, 1911. Serial No. 658,271. (Wheel with spring spokes.) 1 claim.

1,071,547. Suspension for Vehicles. Adolph P. Bertschy, Council Bluffs, Ia. Filed April 6, 1912. Serial No. 688,880. (Spring suspension system with leaf and coil springs connected by levers.) 6 claims.

1,071,553. Stand or Support for Spare Wheels, Tires, and the Like. Charles Grant Hilton and Geo. Tom Hilton, Rugby, and Thomas Main, Loughborough, England, assignors to Rotax Motor & Cycle Co., London, England. Filed Nov. 11, 1909. Serial No. 527,551. (Tire support with pivoted brackets.) 1

1,071,581. Vehicle Tire, Thomas A. Robinson, Salt Lake Çity, Utah. Filed Feb. 12, 1913. Serial No. 748,013. (Cushion tire made in sections.) 2

1,071,586. Vehicle Buffer. John V. Rowan, Fort Stevens, Ore. Filed March 16, 1912. Serial No. 684,185. (Hydraulic and spring cushioned buffer.)

1,071,628. Automobile Tire Pump. Eugene S. Ryone, Bristol, R. I., assignor, by mesne assignments, to Charles A. Cartier, Providence, R. I. Filed Sept. 23, 1912. Serial No. 721,741. (Power air pump with tubular pistons.) 1 claim.

1,071,686. Rotary Valve Mechanism for Gas Engines. Eugene P. Batzel, Detroit, Mich., assignor of one-half to George C. Beck, Spokane, Was f. Filed of one-half to George C. Beck, Spokane, was t. Filed May 10, 1910. Serial No. 560,528. (Rotary disk valve on cylinder head.) 11 claims.

1.071,695. Tire Protector. Julius Brotschneider, San Francisco, Cal. Filed June 5, 1913. Serial No. 771,862. (Detachable tread with spring attachment.)

Anti-Friction Bearing. Fred Eugene 1,071,693. Bright, Philadelphia, Pa., assignor to The Hess-Bright Mfg. Co., Philadelphia, Pa., a comporation of Delaware. Filed June 11, 1909. Serial No. 501.531. (Double ball hearing with filling opening.) 3 claims.

1.071.719. Gearing. Gustave Fast, Baltimore, Md. Filed June 13, 1912. Serial No. 703.375. (Friction drive system.) 10 claims.

1,071,738. Ball-Holding Cage for Ball Bearings. Henry Hess, Wawa, Pa., assignor to The Hess-Henry Hess, Wawa, Pa., assignor to The Hess-Pright Mfg. Co., Philadelphia, Pa., a cornoration of Delaware. Filed Jan. 21, 1909. Serial No. 473,455. (Sheet metal ball cage.) 4 claims.

1,071,739. Ball Bearing. Henry Hess, Philadel-

phia, Pa., assignor to The Hess-Bright Mig. Co. Philalelphia, Pa., a corporation of Delaware Filed Feb. 21, 1911. Serial No. 610,029. (Double ball bear ing.) 3 claims.

1,071,741. Tire Armor. George Edward Hinson, Atlanta, Ga. Filed Nov. 6, 1912. Serial No. 72), 801. (Tire armor of linked metal plates.) 2 claims

1,071,756. Automobile Lock. Philip Kovsky and John F. Hicks, Philadelphia, Pa. Filed May 3, 1911 Serial No. 765,198. (Pedal lock.) 4 claims.

1,071,775. Starting Mechanism for Explosive Egines. Hubert Meredith-Jones, New York, N. Y. assignor to Columbia Nut & Bolt Co., Inc., Bridge port, Conn., a corporation of New York Field June 24, 1912. Serial No. 705,418. (Automatic clutch for starting drive.) 9 claims.

1,071,781. Engine and Magneto Assembly. Emi A. Nelson, Detroit, Mich., assignor to Hupp Meter Car Co., Detroit, Mich., a corporation of Michigan Filed Feb. 14, 1912. Serial No. 677.597. (Magneto mounted on casing over flywheel.), 7 claims.

1,071,785. Automobile Lamp. Oscar O'Neal, frenont, Mich. Filed Nov. 8, 1912. Şerial No. 730,237. (Lamp with sliding side glass.) 2 claims.

1,071,804. Transmission Gearing. Eugene H. Schofield, Atlanta, Ga.; Ray H. Schofield, Cook comp. ceased. Filed Feb. 23, 1911. Serial No. 610,126 (Friction drive system.) 11 claims.

1,071,863. Differential Driving Mechanism. Theodore L. Beguhn, Detroit, Mich. Filed April 27, 1911. Serial No. 623,729. (Ratchet differential device.)

1,071,880. Combined Tire Pressure Indicator and Signal. Charles C. Cleveland, Boulder, Col. Filed April 6, 1912. Serial No. 688,952. (Deflated tirt signal.) 7 claims.

1,071,914. Means for Raising and Lowering An tomobile Tops. Chester K. Hann, Columbus, O. Filed Dec. 24, 1910. Serial No. 599,230. (Cable and traveler device for raising top.) 2 claims.

1,071,926. Spring Vehicle Wheel. Karl A. Kerdrick, Detroit, Mich. Filed Aug. 21, 1911. Serial Na 645,062. (Wheel with curved spring spokes.) 1 claim.

1,071,953. Wheel Tire. Alphonse A. Picard, Nes York, N. Y. Filed Aug. 12, 1912. Serial No. 714, 498. (Two concentric rims with cushion between) 1 claim.

1,071,958. Valve for Explosive Engines. Albert J. Ray, Fort Worth, Tex., assignor of one-third to J. Beneke and one-third to D. Wells, Fort Worth, iex. Filed Dec. 20, 1910. Serial No. 598,463. (Hollow tapered valve.) 3 claims.

1,071,967. Internal Combustion Engine. Pau pranger, Gera-Reuss, Germany. Filed April 25. Spranger, 1911. Serial No. 623,195. (Rotating sleeve valve.) 8

1,071,969. Starting Means for Internal Combustion Engines. Albert A. Stillman, Syracuse, N. I. Filed May 23, 1910. Serial No. 562,807. (Manual starter operated from seat.) 2 claims.

1,071,990. Cranking Device. James B. Easter. Konawa, Okla. Filed June 23, 1911. Serial No. 634; 984. (Manually operated cranking device.) 5 claims

1,072,002. Engine Starting Apparatus. Edward A. Halbleib, Rochester, N. Y., assignor to North East Electric Co., Rochester, N. Y., a corporation of New York. Filed Nov. 6, 1911. Serial No. 688. 902. (Electric starting system.) 8 claims.

1,072,044. Vehicle Top Fastening. Wynn W. Scott, Racine, Wis. Filed April 5, 1912. Serial Na 688,771. (Bayonet-joint device for bow pivots.) claims.

1,072,108. Fender for Vehicles. Samuel Fleisch mann, Indianapolis, Ind., assignor of one-half to Joseph Braun, Indianapolis, Ind. Filed May 22, 19th. Serial No. 628,790. (Pick-up fender lowered by cortact of fairs.) tact of friction shoes with front tires of car.) 11

1.072,120. Armature for Magneto-Induction Mrines. Gottlob Honold, Stuttgart, Germany, F gror to The Firm of Robert Bosch, Stuttgart, Germany, British of Robert Bosch, Stuttgart, Germany Paris, Filed Oct. 4, 1909, Serial No. 520,931. (Mar. noto armature with diagonal winding. 7 claims



EVERY dealer and every motorist in the country has been waiting for the right Six—and here it is. They've wanted a Six selling at the right price—they've wanted a Six built by a manufacturer with years of experience—and a reputation for building a reliable product of the highest quality. That's just what this new National Six is—the right Six at the right price—backed by the quality, faith, integrity and honesty of product that have made the National car world-famous. The National Company

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This new **National** embodies all our internationally recognized principles of superiority. Beautiful, economical, efficient and lavish in comfort—this car is the climax of the **National's** success in car building since its pioneer beginning. It marks a most coveted improvement in motor car designing. It is the one car that harmonizes from end to end—a symmetrical creation that is distinctive and essentially practical.

Brief Specifications National Six

Motor, six-cylinder, 3¼ x 5½-inch, cast en bloc. Tire pump, integral part of motor. Clutch, self-contained aluminum cone. Starting and lighting, electric two unit system. Transmission, sliding gear selective type, three speeds forward, one reverse. Gauge 56 inches. Oiling, crank case constant level, force feed, with gear driven pump. Ignition, high tension, dual magneto with storage battery. Tires, 36 x 4½. Firestone demountable rims. Air pressure gasoline feed, generated by small

demountable rims. Air pressure gasoline feed, generated by small pump in crank case. Capacity 23 gallons. Automatic carburetor Two sets of brakes on 16-inch rear wheel drums. Bevel gear drive through straight line shaft with universal joints and torsion member. Full floating rear axle. Left side drive. Access all four wide doors. Single lever in center controls all speeds. Half elliptic springs, front, special National construction, rear. Equipment:—Top complete with side curtains and boot ventilating rain vision windshield extra Firestone

Equipment:—Top complete with side curtains and boot, ventilating rain vision windshield, extra Firestone rim. electric lighting and starting systems, 12-inch double bulb electric headlights, electric license tail light, Warner speedometer, electric horn, tools and jack.

FIVE, FOUR-CYLINDER MODELS, \$2750 TO \$3400

Dealers'

Best Seller

for 1914

Write for complete information, Today NATIONAL MOTOR VEHICLE CO. Indianapolis, Ind., U. S. A.

Digitized by Google



## The Car to See at the National Shows

You will be irresistibly drawn to the Spectacular Pathfinder Six just announced. The magnificent chassis construction—the startlingly new body lines—the refinement of finish and detail—all have won the enthusiastic approval of men who know automobile values.

#### PLAN YOUR TIME AT CHICAGO SO YOU WILL HAVE PLENTY TO DEVOTE TO THE PATHFINDER EXHIBIT

DEALERS: We have a New Plan for Buying and Selling Automobiles that vitally affects your future relations with Factory and Consumer—Get it! It means co-operation for mutual benefit—service that makes more profitable sales and better satisfied customers. Also ask for details of the \$1,000 Prize Offer. Write today—

THE MOTOR CAR MFG. CO., INDIANAPOLIS, USA
1138 Division Street



Has Been Painted on the Outside of Many Articles But Something More than a Paint Brush is Required to Put them on a Par with the Leader.

THE



### STORAGE BATTERY

was never in the "just-as-good" class. It was the first in the Electric Lighting and Starting field, as history proves.

Being the first, the **CLBA** had ample opportunity to acquire—and profit by—valuable, practical experience during its spectacular rise to the highest pinnacle of popularity in the automobile world.

That's why batteries today are regarded as the absolute standard, while the others are still groping in the darkness of experimentation, seeking the favor of the automobile manufacturer by claiming they are "just-as-good" as the

Five factory owned Branches and 150 real service stations in the U. S. and Canada afford ample guarantee of efficiency and long life to the What do the "just-as-goods" offer you?

#### WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd Street. Detroit Branch: 1191 Woodward Avenue.

Chicago Branch: 2241 Michigan Avenue. San Francisco Branch: 243 Monadnock Building.

Indianapolis Branch: 438 and 439 Indiana Pythian Building.

Service Stations in all principal cities in the United States, Canada and Mexico.

(80)

## "A Mechanical Masterpiece"

## GLENN CURTISS, perhaps the greatest light-engine expert in the world, has just bought a Jeffery Six.

Mr Curtiss knows what has been accomplished by the use of highspeed light motors. Some of his own greater achievements in aviation have taken place in Europe. He has ample opportunity to observe

the progress made there in light-motor construction. He has seen this idea replace all others in European automobile engine development.

So when Mr. Curtiss buys a Jeffery—the first American car to recognize and adopt the light, high-speed bloc-type motor—it is the endorsement of an expert. "The Jeffery," Mr. Curtiss says, "incorporates the latest European practice

He was one of the first to make inquiry about this remark able car when the announcement was made. Then he took a demonstration and immediately sent the Thomas B. Jeffery Company a telegram. The text of this telegram is quoted complete on the opposite page under Mr. Curtiss' picture. His Jeffery Six was delivered to him on November 29, 1913.

The light, economical motor used on European cars has proved its correctness in millions of miles of continental running. The heavy motors of some American makers have demonstrated beyond doubt through their costly maintenance expense their unfitness for cars of moderate price. But these manufacturers cling to the use of the heavy type of motor.

They continue to use it because until now the American motor car buyer has not realized that motor power was not dependent upon motor bulk; and because their plants are equipped to build this type

We cheerfully acknowledge the supremacy of the light European motor—and we hasten to adopt that which means better service and greater satisfaction to the owners of Jeffery cars.

We are in business to produce the automobile that you want—and we have accomplished that in the Jeffery Four at \$1550.

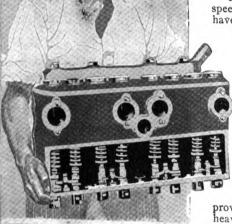
You demanded economy, speed, stamina, lightness and comfort We built the Jeffery Four to that order.

And believing in that business law which rewards the fit against the unfit, we feel sure that the Jeffery Four will in a very short time supplant a great many of the heavy American models.

Already we have sold hundreds of cars to men who could pay more, but who found they could not buy better.

They had declared themselves for flexibility. Jeffery gave them a car that would make 40 miles an hour within 20 seconds,

They had declared themselves for light-Jeffery produced a car that weighs but 2870 pounds.



#### Specifications of Jeffery Four---\$1550

Specifications of Jeffery Four—\$1550

U-S-L starting and lighting, without chains, gears, bearings or belts. Left hand drive and center control.

Imported annular ball bearings throughout; Spicer universal joints; combination force feed and splash oiling system. (Speed up to forty miles an hour, shut off your engine and coast half a mile.) Leather ring universal between clutch and transmission; four forward speed transmission—the lightest and easiest to operate.

High grade full floating type rear axle, on imported annular ball bearings—a delight to the motor wise. Vanadium steel rear axle drive shafts, front axles, springs and steering knuckles.

Bosch duplex ignition; Rayfield carburetor; pressure feed gasoline tank with gauges on tank and dash; demountable rim; advanced type of body designed by Rothschild. Jeffery Four equipment includes Neverlevk top; top cover; rain vision wind shield; electric lighted dash with Stewart-Warner speedometer, ammeter, air and oil pressure gauges, four position light switch and small storage compartments; Klaxet horn; foot rest; extra demountable rim with carrier, and complete tool and tire equipment.

Engine driven power tire pump, \$25 extra.

equipment.
Engine driven power tire pump, \$25 extra.





### says



## Glenn

## **Curtiss**

They had declared themselves for power Jeffery offered a light, fast motor that develops 42 horse power.

They asked economy. Jeffery motors are high efficiency motors; burning little gas; burning it completely, quickly and economically.

Jeffery lightness (2870 pounds) means a long life to tires; often six or eight thousand miles per set.

A Jeffery horsepower has to pull but 60 pounds of car—other motors have to pull from 80 to 100.

And above all, the discriminating buyer who has owned other cars, and had discovered the sacrifices necessary to low price, demanded comfort.

"It can't be done," said Jeffery dealers.

"It is impossible," said the very owners whose specifications we set out to incorporate.

Jeffery Did It.

And because he proved that we had met every demand for lightness, speed, power, economy and comfort, and the result is mighty gratifying to us.

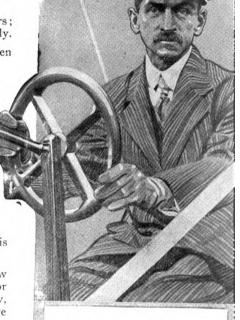
The best dealers everywhere in the country are organizing new companies and dropping other lines to sell this car, and the motor car buying public who have been paying much more for big, heavy, uneconomical cars, and much less for cheap, uncomfortable cars, are driving Jeffery cars this season.

The Jeffery Six is a duplicate of the wonderful Jeffery Four, except for size The cylinders are cast in pairs. This car, which sells at \$2,250, is in a great many ways as remarkable among Sixes as its smaller brother is among the Fours. We built it for those who will drive nothing but a Jeffery car, but who prefer a Six. It is light—actual scale weight, 3570 pounds, with full equipment. We made it luxurious and beautiful without making it extravagant. We know that a better Six cannot be built.

The motor—3¾ x 5¼—develops 48 horse power. The bearings are imported annular ball throughout. The ignition is Bosch Duplex and the starting and lighting system is the U-S-L of course. Wheel base, 128 inches, and wheels 36 x 4½—on enclosed cars 37 x 5—full floating rear axle, Rayfield carburetor, Warner autometer, ammeter, engine driven power tire pump, Rothschild body with extra wide doors and low, deep seats. This car is made with five passen-

ger touring or two passenger roadster body at \$2250; six-passenger at \$2300; Sedan, five passenger, \$3250, and Limousine at \$3700.

The Thomas B. Jeffery Company Main Office and Work, Kenosha, Wisconsin



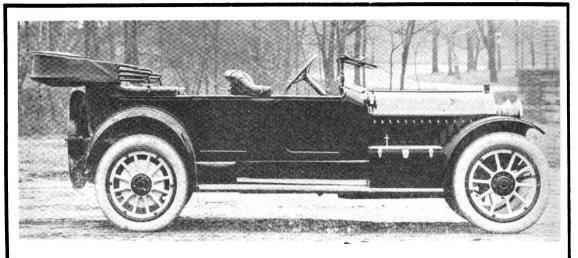
#### Glenn Curtiss Says:

"I have been running the new Jeffery Six and I am glad to report to you that the car is as good as it looks and a mechanical masterpiece. The machine is up-to-date in every respect and incorporates the latest European practice throughout. It has plenty of power and speed and is easy riding and very easy to handle. The engine is quiet and pulls exceptionally well on direct drive at slow speeds. I wish to thank you for your prompt delivery and courteous treatment."





Jeffery Six \$2250



#### Announcing

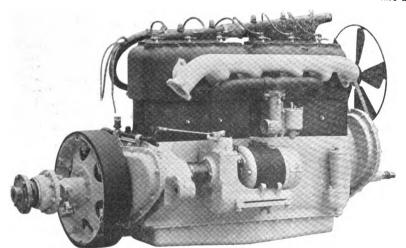
### The MARMON "41"---\$3

THE Marmon 41 is a six-cylinder car of ample power, moderate size and reasonable price. Not only is it in all respects worthy of the Marmon name, but it is of such character that it should add to the world-wide prestige of builders famous for the quality of their motor cars. Certainly it is the finest example of their well-known skill Marmon accuracy has become the ideal standard of shop practice in the automobile industry, just as the Marmon become standard with many of the higher grade cars.

The model 41 is not a hurried job either in design or construction. Nothing has been left to "inspiration," accident completed car. Correct proportions of weight and power, selected and thrice tested materials and the finest of workwill give the best of service for years to come. The motor is a marvel of velvety smoothness and silent power. The baths. This is but one of numerous new and minute refinements embodied in this model.

ries known to motordom—and many that have been heretofore unknown—are found in this model and are the best that comfort and luxury over any kind of roads and grades, that will throttle down to a crawl or go at breathless speed, without shifting gears, and a car that should be as good for many years in the future as it is today.

The Marmon "32"



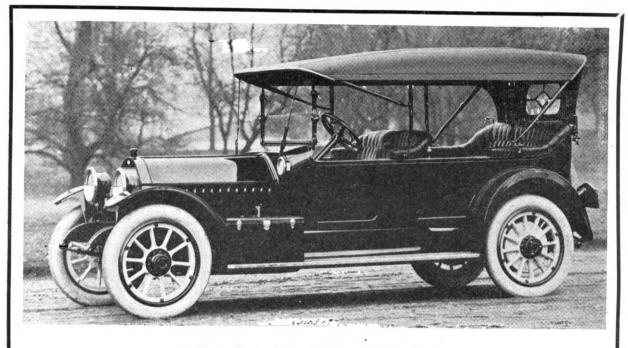
Nordyke & Marmon Co. (Established 1861) Indianapolis, Indiana

#### The Marmon "32"

Price, \$3,000. Four-cylinder, 32-40 h. p., 120-inch wheel base, body types and equipment to meet every requirement. A rational, logical car for touring and city use. Years of satisfactory service have proved its economy in have proved its economy in tires, fuel, and upkeep plus smooth, delightful operation and durability.

#### The Marmon "48"

Price, \$5,000. Six-cylinder, 48-80 h. p., 145-inch wheel base with short turning abilbase with short turning ability eliminating the old objections to long wheel base. Body types and equipment to meet every requirement. The only big car with small-car advantages. Wonderful riding qualities and surpassing power and flexibility. A car developed by years of exacting tests.



#### Outline Specifications of

### The MARMON "41"---\$3250

FRAME—Pressed steel. Double drop, af-fording ample spring clearance combined with low center of gravity. The side members are six inches maximum depth.

MOTOR—Water cooled, six cylinder, L-head, vertical, cast in blocks of three with enclosed valves. Bore 4½ inches, stroke 5½ inches, Seven bearing crank shaft.

HORSE POWER-41 to 70.

HORSE POWER—41 to 70.

OILING—Marmon system of automatic force feed lubrication in motor, delivering oil directly into all bearings. Oil thrown off by movement of cranks lubricates the walls of the cylinders and the pistons. The cam and valve tappets operate in circulating oil baths. The oil is carried in a reservoir below the sweep of the cranks passing through a screen and is used over and over. There is no splash or churning of oil. The oil consumption, friction and wear are reduced to a minimum.

IGNITION—High tension magneto and dry attery for starting. Dual system. Single coil battery for starting. with lock on dash.

TRANSMISSION — Selective type sliding gear arranged very compactly in a dust-proof oil-tight case mounted central on three-point support. Three speeds forward and reverse.

CLUTCH — Ashestos fabric faced cone clutch with adjustable "pick-up" springs under the fabric.

DRIVE-Straight line shaft drive.

REAR AXLE—Full floating type. Pressed steel housing, with bevel gear differential easy of access through axle housing directly from the rear, both features being original and first used in the Marmon.

FRONT AXLE—Forged steel I section. Weight carried by conical thrust bearings. Conical roller wheel bearings. Yokes and steering arms are alloy steel forgings given special heat treatment. Cross connection back of axle.

BRAKES—One set, integral expanding 17 inches diameter by 2½ inch face and one set

external contracting  $17\frac{1}{2}$  inch diameter by  $2\frac{1}{2}$  inch face.

WHEEL BASE-132 inches. Tread, 561/2 ches. Clearance, 10 inches. WHEELS - Wood artillery. Interlocked

RIMS — Quick detachable, demountable. One extra rim supplied.

TIRES-35 x 5 front and rear.

STEERING GEAR—Irreversible, worm and worm wheel construction. Large bearings with ample provision for lubrication. 18-inch steering wheel with solid spider and grip. Horn button in center on top of wheel. Column of large diameter enameled black, as is also the wheel spider.

CONTROLS—Left hand drive, center con-trol levers. Improved spark and throttle lev-ers on steering wheel held by friction. Foot accelerator.

CARBURETOR—Automatic float feed with control from dash for starting.

GASOLINE TANK—Seamless steel. Capacity, 25 gallons. Tank suspended from rear end of main frame side members.

RADIATOR-Cellular, mounted on a trun-

SPRINGS—Self lubricating. Front, semi-elliptic, 2 inches wide by 39 inches long. Rear, three-quarter elliptic, 2½ inches wide by 57 inches long.

BODY—Convex curve type, of very substantial sheet metal construction. Concealed hinges. Doors open forward. Cowl dash with manhogany board on which the coil, speedometer, clock, air and oil gauges, and carburetor control are very neatly flush mounted convenient to driver.

FINISH—Blue black bodies with fine lined cream stripe, running gears the same with wheels painted cream color striped in black. Nickel trimmings.

UPHOLSTERING—Best of genuine black leather; coil, spring backs, spring edge cushions, best of white curled hair. Leather welts and binding. Deep and luxurious cushions. Tuffed unholstering.

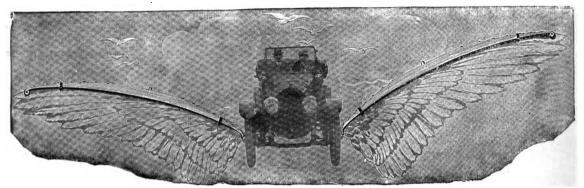
CARRYING SPACE—Commodious box on right front fender with corresponding tool box on the left front fender. Space under front seat with drop door in tonneau. Pockets in tonneau doors.

seat with drop door in tonneau. Pockets in tonneau doors.

EQUIPMENT—Electric starting and lighting system with storage battery easy of access, mounted under front seat; large electric head lamps, electric dash and tail lamps all with wiring concealed within the brackets. License plate holder in combination with tail light. Bulls-eyes in the rear of the dash lamps throw light on the running boards. Lamps black enamel with nickel finish. Electric dash lamp. Switch for lights conveniently mounted on heel board of front seat. Pantasote cape top with dust boot and curtain; dividing rain vision ventilating windshield, self supported from dash. Speedometer and clock mounted flush on dash with speedometer drive from gear on driving shaft underneath the car. Electric emergency lamp with long extension cord, electric horn mounted under hood with push button in center of steering wheel. Power tire pump mounted on motor. Shock absorbers and re-bound straps mounted on rear axle. Muffler cut-out. Single tire carrier in rear substantially supported from ends of side frame members. One extra demountable rim. Coat rail, foot rest, assortment of tools, oiler, jack and tire repair kit.

Five Passenger Touring Car	\$3250.00
Four Passenger Touring Car	3250.00
Two Passenger Roadster	3250.00
Speedster	3250.00
Limousine (seats seven)	4750.00
Chassis, without dash and rear fen-	
ders, but with front fenders, hood	
lighting system and lamps and	
standard chassis equipment, painted	
in lead	3000.00

Nordyke & Marmon Co. (Established 1851) Indianapolis. Indiana



### Ride on These Wings of Steel

Flexibility, Security, Durability—all these essential qualities are forged into Detroit Springs. Their "give and take," backed up by a sturdiness unequalled, enables your car to skim the roughest road with comfort and safety to you. They afford, as well, a constant protection to your car's mechanism.

There is only one true test of spring worth—the test of time. One ride—even one year will not tell the lasting story. That is why Detroit Springs can carry a two year guarantee—they have the quality that holds. For your own satisfaction and safety, you should demand that your next car be equipped with

#### Demand the Springs Which Are Self-Lubricating



## The Springs Bearing this Trade-Mark

The result for you will be springs that will not squeak, rattle, settle or break. Comfort in riding such as you have never thought possible.

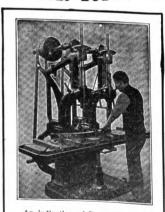
And these accomplishments for you are not something Detroit Springs just happen to provide. Years of research and experiment, tests beyond number by top-notch spring engineers—have combined to make quality of material, workmanship and results, an unchangeable habit at the Detroit Steel Products factory.

Trible Heat Treatment for example is

Triple Heat Treatment, for example, is taken as a matter of course. Single or double heat treatment, even, only too often satisfy the manufacturer whose product is hurriedly made to sell at a price.

But nothing short of the Detroit Steel Products triple and exact heat treatment and oil quenching will insure against sagging, weakening and breakage. Therefore nothing less than this standard has a minute's consideration in Detroit Spring manufacture.

Everywhere from ore to finished product our demand of D. S. P. engineers is *Qual*-



An indication of Detroit Spring minute exactness is found in the "eye" which is reamed out by machine here shown, to one one-thousandth part of an inch.

ity without sacrifice.

Detroit Springs for each individual make of car are planned, forged, treated, fitted and tested for that car and no other. Your emergencies as well as your every day road experiences, are multiplied, and form the uncompromising standard by which the springs for your car are tested.

The "Initial Test," the "Hardness Test," the "Capacity Test"—one proves the permanence of the resiliency, one determines whether the texture strength is up to standard, one tests complete spring repeatedly.

Combined, these tests try the spring as no road ordeal could. And the spring must come through unscathed or it is rejected.

Write for the booklet that explains these tests in detail and demonstrates your need of Detroit Springs. It explains how Detroit Springs insure you safety and lengthen the life of your car and tires.

Study the newly invented self-lubricating feature, which removes the possibility of spring squeak. Learn of the two-year guarantee which puts full responsibility for your riding comfort and spring safety up to us.

Detroit Steel Products Co., 2258 E. Grand Blvd., Detroit, Mich

## Have You a Small-Car Engine?

Alco
Simplex
Lancia
Knox

How fast do you think an electric starter ought to spin it, using 95 amperes at 5.6 volts?

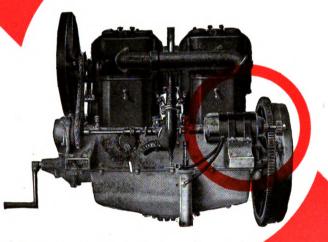
A certain manufacturer, whose engine nearly matched the above dimensions, was getting 90 r.p.m. with 90 amperes from a certain starter. The starter had the usual double-reduction train of gearing.

It happened that we were able to put the Rushmore Model C Starter in the place occupied by the gear train, so that it meshed directly with the flywheel, thus cutting out one reduction.

With a gear-to-pinion ratio of 63/4 to 1, the Rushmore Starter spun the engine at

175 r.p.m.

using 95 amperes at 5.6 volts.



Simplex "38," 47/8 x 61/2 inches, with Rushmore Model C Starter.

The Starter that starts with a rush is

#### The RUSHMORE STARTER

The Rushmore Starter spins any engine 50 to 150 per cent. faster than any other starter taking equal current. It is so economical of current that it will spin an engine steadily for 45 to 60 minutes on one charge of a 120-ampere-hour battery.

One more point—by cutting out the intermediate gears, the Rushmore outfit in the case above quoted saved 30 pounds weight and \$24 in cost to the manufacturer. Yet it gave a system in every way more durable, efficient and satisfactory.

We make starters for automobile and marine engines up to 6 cylinders,  $6\frac{1}{2}$  x 8 inches. A recent installation on a 175 h.p. marine engine showed a spinning speed of 126 r.p.m., using 4.35 h.p.

#### RUSHMORE DYNAMO WORKS Plainfield, N.J.

Standard equipment in America on Mercedes, DeDion-Bouton, Isotta Fraschini, Austrian Daimler, Delaunay-Belleville.

**Stafford** 

Regal

Mercer

Kline

S & M



### Speaking of Trials-

of tests—in the tests to which engineers subject ball bearings they find it almost impossible to break down a Gurney Bearing. Why is this? Why does a ball or a raceway in a Gurney Bearing stand up better than in any other ball bearing? It is due more than to any other single cause to the greater closeness and exactness of our RACE CONTOUR. Granting, for the sake of the argument, that in other respects other bearings are as good as ours, the difference in the contour of our raceways alone would ensure for our bearings greater capacity and endurance.

- When a load is imposed upon a ball bearing the steel of both balls and raceways yields and the area of contact between ball and raceway increases. As the area of contact increases the resistance to further distortion increases, and so the supporting capacity is increased. Under load the steel yields until with the increasing contacting or supporting surfaces the resistance to further distortion equals the load.
- Now, the closer the race contour is to ball contour the less yield or springing of the steel is required to get a given area of contact and support. When a ball is running in a raceway of 4% greater contour the steel is distorted less than when the contour is 7% or 10% greater.
- This, then, is the simple explanation for the much greater capacity and endurance of the Gurney Bearings. With our 4% raceways a given load distorts the steel of both balls and raceways less than in any other bearings made. CLOSER RACE CONTOUR, LESS DISTORTION, GREATER CAPACITY, AND LONGER LIFE. That is the race contour argument in a nutshell.

## GURNEY BALL BEARING COMPANY Jamestown, N.Y.



#### Do You Know That These

### Waltham Automobile Timepieces

#### are the First Timepieces Ever Designed Especially for Automobiles?

It seems almost incredible that hitherto timepieces for automobiles were not constructed specifically for that purpose, but were merely adaptations. Naturally the results were unsatisfactory.

Now, however, the Waltham factory is utilizing its unrivaled facilities for the manufacture of timepieces scientifically constructed for the strenuous conditions of motor car travel. In place of the incongruous or downright worthless timepieces which have flooded the market, automobile manufacturers and owners are now adopting as standard equipment the superior Waltham products.

Consider these points of superiority in the Waltham Automobile Timepieces:

-It keeps accurate time.

-It runs eleven days with one winding.
-It has an Indicator on the dial which gives warning three days before the timepiece runs down.
-It is stem wind and stein set, and the winding crown

is always accessible. The movement need never be exposed to the elements.

5—Its style and appearance are in keeping with the finish and appurtenances of the finest car.

6—It is adjusted to temperature, and extremes of heat and cold do not affect its timekeeping.

7-It cannot be taken from the dashboard unless the

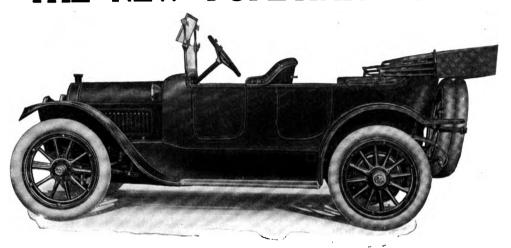
owner supplies the key to unlock it.

-It is guaranteed by the Waltham Watch Company, the largest and most celebrated manufacturers of fine timepieces in the world.

#### WALTHAM WATCH COMPANY Waltham, Mass.

#### POPE QUALITY HAS NEVER BEEN QUESTIONED

#### THE NEW POPE-HARTFORD



POPE LONG STROKE MOTOR FOUR CYLINDERS FORTY HORSEPOWER **BALL BEARING** TRANSMISSION

Model-"35"

POPE CARBURETOR ELECTRIC LIGHTING **ELECTRIC STARTING** LEFT SIDE DRIVE CENTER CONTROL

Every Improvement-Every Convenience-Every Device, calculated to give prestige to the 1914 Motor Car and proven Scientifically and Mechanically Worth While, is found as a component part of the New Pope-Hartford, Model 35. In combination with all these features, the basic principles of Pope Construction remain unchanged.

Model 35 is built in the POPE FACTORIES in Hart-

It is the most complete and most lastingly serviceable

It is the most complete and most lastingly serviceable four-cylinder motor car that it is possible to build, regardless of price. YOU CANNOT ASK FOR A BETTER CAR—YOU CANNOT GET A BETTER EQUIPMENT. The long stroke motor embodies all of the well tried POPE features. It is built entirely in our own factory. It is most ECONOMICAL in oil consumption. It is the most POWERFUL motor of its size known to the industry. The it is the most POWERFUL motor of its size known to the industry. The Ignition is by "Bosch" High Tension Dual System. The ROLLER BEAKING, FOUR SPEED, selective type TRANSMISSION is recognized as the equal of any and in many respects SUPERIOR TO MOST of the transmissions in the second seco missions in use, even in the highest priced 1914 models.

In accord with the practice now prevailing in this country and abroad, the STEERING gear is located at the LFFT SIDE, with gear change and brake levers in the center, at the drivers' right hand.

The Braking surface has been considerably increased in area.

The gasoline supply is force fed from a tank at the rear of the chassis,

by pressure generated by a plunger pump, operated from the cam shaft.

The GRAY & DAVIS ELECTRIC STARTING AND LIGHTING SYSTEM has been materially improved. Its action is positive, quiet and economical in its consumption of economical in its consumption of the control of the c

we have designed NEW METAL BODIES for Model 35, wholly different in appearance from those heretofore used, combining straight line and curve effects, attractive and modish. The enlarged seating space and new method of upholstering afford a large measure of components. measure of comfort to the occupants. Another new feature is the control board located beneath the cowl, ooard located beneath the cowl, whereon are mounted the coil, lamp switch and other instruments, all grouped within convenient reach.

TOURING CAR OR ROADSTER, \$2250—COUPE, \$2850. Rudge-Whitworth wire wheels optional at an extraction of the control of the contr

worth wire wheels optional at an ex-

tra charge.
MODEL 35 HAS BACK OF IT 36
YEARS' EXPERIENCE in the manvehicles and 18 years in the manufacture of highest grade mechanical vehicles and 18 years in the making of Quality Automobiles. It contains Many Valuable Features not found in any other Motor Car. OUR CATALOG TELLS THE COMPLETE STORY. SEND FOR IT. THEN SEE THE CAR ITSELF.

#### A Word to the Dealer

It is significant that practically EVERY DEALER who handled the POPE-HARDFORD line in 1913 is ENTHUSIASTIC over MODEL 35 and will continue in his loyal support of the POPE Product. This is the logical result of square dealing, backed by a carthat gives its every owner a full measure of satisfaction.

If you reside in territory not now allotted IT WILL PAY YOU, as it has hundreds of dealers, to get in touch with us.

#### The Pope Manufacturing Company

HARTFORD, CONN., U. S. A.

RESPONSIBLE BUILDERS OF RELIABLE MOTOR CARS

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# OOTH BRAND

### Shipment Guaranteed On Day Ordered

UR equipment of specially designed machinery for our line of work is most complete, and with our large stock of selected felts for the motor car trades, enables us to fill all orders promptly and to the satisfaction of our customers.

Each felt is numbered so that manufacturers can duplicate their previous orders without waiting for samples.

Every detail of our business is arranged so that our co-operation with customers is practical as well as helpful.

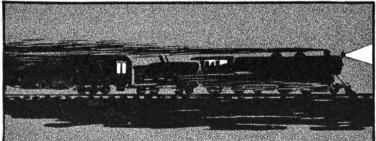
#### **Booth Felts are used for:**

Washers of every size for hubs, rear axle grease retainers, steering gears, speedometers, carburetors, and for every other purpose where a washer is needed in a motor car assembly; strips for radiator cushions; squeak preventive between chassis and body; strips for sashless limousine windows; bumpers; plugs and washers for magnetos; oiling wicks for spring bolts. We also make all kinds and shapes of gaskets without expensive dies.



N. E. BOOTH, 642-44 Pacific St., Brooklyn, N. Y. The BOOTH FELT CO., Ltd. Gananoque. Ont.







Digitized by Google

19 St.

# M A Y O R A D I A T O R S



EVENTS have proven that more courage and ability are required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY
New Haven, Connecticut

The right curtain for the right place—always at your finger ends—with Collins Always-Ready Curtains. Put them up instantly from inside of car—without leaving your seat.

Don't stand in the mud with the rain pouring over you while the other occupants of the car hand you out one wrong curtain after another. This is such a gigantic improvement over the old method and so simple that you wonder why every car on the road isn't already equipped with

# Collins Always Ready Curtains



But many of the best cars are already equipped. For instance, Collins Always-Ready Curtains are now standard equipment on the Cadillac, Chalmers, Haynes, Cole, Pullman, Havers, Herreshoff, Jeffery, Lyons-Atlas, Apperson, Winton, Stearns-Knight, Moon, Velie, Davis, Speedwell, Jackson, Pratt, Palmer, Stanley and McFarlan. The judgment of all these manufacturers must be right.

Collins Curtains are strapped, rolled up to the bows in the top of the car. Simply unbuckle the straps, slide the curtains down the curved bracket bar and clinch into place—the *right* curtain for the *right* place—every time.

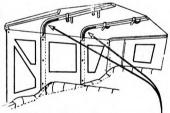
With the old style curtains you never know what condition they are going to be in when you discommode the rear seat passengers to pull your curtains out from under the seat. Folded and packed tight you're almost sure to find broken or badly buckled celluloid lights. And dirty?

—no name for it.

With Collins Always-Ready Curtains you know in advance that your curtains are going to be in perfect condition, because they are always neatly rolled in the place where they belong.

To Ford owners: We can now furnish Collins Always-Ready Curtains for Ford cars. We license top manufacturers to furnish Collins Always-Ready equipment with new tops or to equip old tops.

You can have Collins Always-Ready Curtains on your new car. You can have Collins Always-Ready Curtains on the car you are now driving. Any top builder can apply them at a moderate charge,



and the Collins attachment is applicable to any top and to your old style curtains.

There are some imitations and evasions of the Collins patent, which in some respects resemble Collins Curtains but they do not have Collins advantages. Look for the exclusive Collins

and the Collins license tag.

Be sure to see Collins Always-Ready Curtains at the New York, Chicago, Boston and Philadelphia Automobile Shows---or better still, write us today and we will tell you where you can see them now.

Novelty Leather Works (Dept. D

Jackson, Michigan

# RECORD STATEMENT OF AUTOMOBILE SUPPLY MANUFACTURING CO.

## Makers of Newtone and Motophone Horns Have Over \$100,000.00 Cash in Bank.

We wish to inform the trade that this year we have doubled the production of Electric and Mechanical Horns and there need be no apprehension about Prompt Deliveries.

We have ample facilities and ample means to fill orders for any quantities.

Our year's statement with inventory will not be ready before January 10th, and in order to get some information in the trade papers of the Auto Show Issue, we submit the following affidavit:

STATE OF NEW YORK
CITY OF NEW YORK
BOROUGH OF BROOKLYN
COUNTY OF KINGS

Ella A. Harrington, of the Borough of Brooklyn, City and State of New York, being duly sworn, deposes and says that she has been employed by the Automobile Supply Mfg. Co., a domestic corporation, for about eight months last past in the capacity of bookkeeper and cashier, and that she is familiar with the cash books, bank books and check books.

Deponent further states that she has examined said books on December 24, and same show that the Automobile Supply Mfg. Co. has in banks a total balance of \$102,002,14.

(Signed) ELLA A. HARRINGTON.

Sworn to before me this 24th day of December, 1913. (Signed) ISAAC BROWN.

gned) ISAAC BROWN, Notary Public, Kings, Co.

We have over \$100,000 in cash with over \$200,000 merchandise and 917 receivable accounts. As for facilities, etc., we are the largest horn manu-



facturer in the world and we have produced and sold 1,137,000 automobile horns during the last seven years, and we have a capacity to turn out more than 10,000 horns per week. "We are shipping more horns than all the other auto horn makers combined."

Our factory is open for inspection at any time during the day.

In one department alone 216 men are making and shipping 850 horns daily to Ford Motor Co., Detroit, and to their assembling plants.

In another department 96 skilled mechanics are making 250 "MOTO-PHONE" horns per day.

In factory No. 3, connected with the main building, 123 mechanics and electricians are producing 2,700 "NEW-TONE" horns per week. Besides 87 men in the foundry, enameling plant and machine shop.

In the main building, horns of all types and sizes are made and shipped to jobbers and manufacturers, besides the Press and Stamping Shop. We have discounted all our bills for the last four years, and we enjoy the best credit.

The following affidavit is made to show our exact financial condition—less than \$10,000 in Bills Payable of which none is now due.

AFFIDAVIT - December 23d

STATE OF NEW YORK
CITY OF NEW YORK
BOROUGH OF BROOKLYN
COUNTY OF KINGS

Harry A. Davenport, of the Borough of Brooklyn, City and State of New York, being duly sworn, deposes and says that he has been employed by the Automobile Supply Mfg. Co., a domestic corporation, for over a year last past in the capacity of head bookkeeper, and that he is familiar with and controls the entire set of books.

Deponent further states that he has examined said books on December 23rd, and same show that the Automobile Supply Mfg. Co. has no accounts due, and the total amount of bills to be paid including all the bills for goods not yet received at date amount to \$9,669.72, of which none are due.

(Signed) HARRY A. DAVENPORT.

Sworn to before me this 23rd day of December, 1913.

(Signed) ISAAC BROWN, Notary Public, Kings, Co.

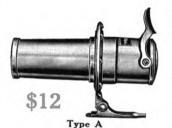
No stock is held in this Company outside of Louis Rubes, Ernest Rubes, Nicholas Rubes and Frances Rubes-Pascucci.

AUTOMOBILE SUPPLY MFG. CO.
LOUIS RUBES, President

The above affidavits are on file in the office of this publication

# Mechanically Operated

# Five Types of Auto Horn Which Have Created the Greatest Sensation in Auto-Horn Industry



HAND OPERATED

NO Adjustments Motor Troubles

Battery Expense Electric Wiring



Type B

\$10

.

We are the largest Auto-Horn makers in the world. During the last eight years we have made and sold over 1,137,000 auto horns.

We are in a position to give Better Value for Less Money than any other horn maker in the world.

Liberal Discounts to Legitimate Jobbers.



The Cable Attachment of the Motophone has been devised and perfected to offer to the trade a mechanical horn having all the characteristics of motor driven (electrical) horns without the care of the electric motor, the cost of maintenance, adjustments and the numerous petty annoyances of which the user of the motor horn is subjected.



O beir

With Push Button and Cable, operated exactly the same as an electric horn and gives as loud a warning note. Guaranteed for two years.

Newtone OUR \$10 Motor Superior OUR \$10

Conceded by practically the entire industry as being the best electric horn made.

Type C for motorcycles has won instantaneous approval, a splendid warning signal for little money.



Type C For Motorcycle

Automobile Supply Manufacturing Company

220 Taaffe Place

INCORPORATED 1964

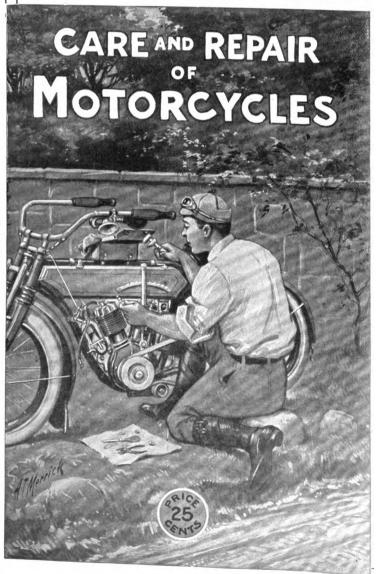
BROOKLYN, N. Y.



Spend a quarter for this book—save many dollars in repair bills

It is the n friend becon the jol of trouble not be a me to underst

It is brim fu and suggesti type of moto



# Hupmobile To The New Year!

We look to the New Year with confidence and a keen anticipation.

Upon the Old Year—that is passing—we look back with keen satisfaction and a very deep sense of gratitude to the many thousands of Americans who have helped to make the Hupmobile what it is—in these closing hours of 1913.

It has been a wonderful year—the most wonderful year of the many wonderful years the Hupmobile has known.

The last three months of 1913 bring to a fitting climax the achievements and success of the year—because—

October sales were the largest October sales the Hupmobile has ever known—

November sales were the largest November sales the Hupmobile has ever known—

December sales were the largest December sales the Hupmobile has ever known.

1913 has been a wonderful year for the Hupp Motor Car Company.

1913 has been a wonderful year for 1500 Hupp dealers and distributors, and, judging by the ever-increasing volume of Hup sales, the huge number of re-orders and the cordial, even affectionate, words we have from 35,000 American families, it has been a wonderful year, too, for Hup-owners across the world.

Perhaps, the most gratifying realization of the year—perhaps, the most potent factor in the Hupmobile's astounding success has been the proof that the Hupmobile is distinctively, literally and universally—"The Car of the American Family."

We hoped it would be. We designed it and built it that it should be.

Today we know that it is because we have from thousands of American families expressions of the affectionate regard in which they hold the Hupmobile.

That fact helps to explain much in this wonderful year in Hup history.

It verifies the dramatic declaration made by a Hup dealer when, with his brethren, he met in convention in Detroit last September. He swept the convention off its feet by saying:

"Boys—when yuh talk to me about competition — I — don't — know — what — yuh — mean. I never met up with it."

And that today is the position of the Hupmobile.

The Hupmobile—in all the huge field of motor cars of all prices—stands out in bold relief.

Alone in the business judgment of automobile dealers.

Alone in the hearts of the American family.

Than that which we have enjoyed, we can wish no man a happier or more prosperous New Year.

HUPP MOTOR CAR CO., 1254 Milwaukee Ave., Detroit, Mich.

The car of The American Family

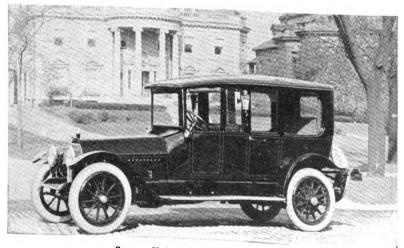
# Simplicity—Luxury—each has its place in the Stearns-Knight

In the simplicity of its design and construction lies the great advantage of the sleeve-valve motor over the old type. For simplicity means efficiency and freedom from trouble. It means maximum service with minimum depreciation. The silence, smoothness and flexibility characteristic of the Stearns-Knight motor are due to the positive, unvarying action of the sleeve-valves. And the sturdy simplicity of Stearns chassis construction augments these advantages throughout the car.

Luxury has its place in body details and refinements—the richness of finish, upholstery and trimming—the wealth of convenient appointments. Nothing has been overlooked—the comfort and convenience of the motorist are provided for with a lavish hand. Combined with the wonderful smoothness of the power plant and chassis the result is a luxury of motion never before achieved.

Four-cylinder Models—\$3750 to \$5100 Six-cylinder Models—\$4850 to \$6200

Catalog upon request



Stearns-Knight Six-Cylinder Limousine

THE F. B. STEARNS COMPANY CLEVELAND, OHIO



Give Your Customers an Introduction to Fisk Quality Through the

# FISK PURE PARA TUBE

THEY will thank you for it—because you are giving them what they want—a tube that will stand maximum strains and 100 per cent more puncture repairs than any other; a tube with no thin spots; a tube that will not deteriorate with non-use or climatic changes.

YOU will command the respect and confidence of your trade as we will command your respect and confidence once we have business dealings with you.

The 42 Fisk Branches in Principal Cities back up our dealers with instant service, fresh and varied stocks and expert repair departments. Write Dept. 23 for our Dealer Proposition.

### THE FISK RUBBER COMPANY

Factory and Home Office

Chicopee Falls, Mass.

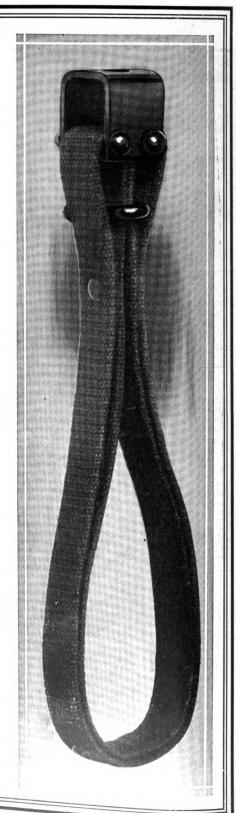
Distributors---THE FISK RUBBER COMPANY OF N.Y.

# Ghe Gilmer Rebound Strap

Its strength and the quality of its weave, material and chemical treatment against deteriorating influences have won it a permanent place in the standard equipment of the finest, as well as on the more popular American built cars. Its work is distinctly different from that of shock absorbers—as different as are the meanings of the words safety and comfort.

# L. H. Gilmer Co.

52 North Seventh Street PHILADELPHIA, PA.



# One Million Cars Prove the Truth About Lighting

Most of them, over four-fifths of the million, are gas lighted.

Those that are lighted with electricity are contributing even stronger proof why gas lighting is more economical, most efficient, just as convenient and far safer.

Investigate carefully before you buy your new car. It will save you time, money and trouble if you use the coupon below.

#### Economy

Absolute proof in actual tests and service show that electric lights cost you five times more than Prest-O-Lite. Evidence awaits you. Get it.

#### **Efficiency**

The candle power of the electric lamp bulb is about half that of the naked flame of gas lighting. If you want only a dazzling beam, half a mile down the road, you can get it with a parabolic reflector. But experienced drivers prefer gas lamps that show the road immediately in front of the car where it is needed.

#### Convenience

With the Prest-O-Liter and Automatic Reducing Valve, gas lighting offers every "pushthe-button" convenience. You can light or extinguish any or all the lamps on your car from the seat.

#### Safety

Here is a quotation from one paper—

"Seventy-five per cent. of the collisions that have taken place in the night time in San Francisco of late, can be laid to the glare of the electric headlights of the modern car." —Pacific Motor, San Francisco.

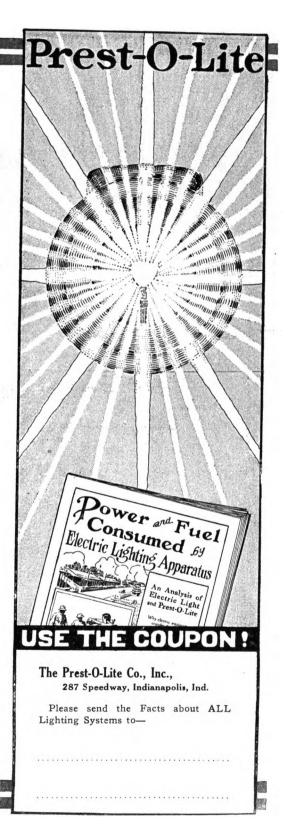
The coupon brings added proof. Use it!

DEALERS Every day we are hearing from a few practical dealers, who have sunk profits in trying to make electric lighting equipment live up to the maker's claims. We have a special message for the wise dealer who can see ahead of today—who is figuring on the future. Ask for it.

The Prest-O-Lite Co., Inc. 287 SPEEDWAY IND. INDIANAPOLIS, IND.

Exchange Agencies Everywhere

(Contributor to Lincoln Highway)



# Motor Print

Present Circulation Guarantee Is

40,000

But We Are Working for

50,000

all paid in advance—all interested in motoring.

We want 2,500 more car, truck and accessory dealers on our subscription list and then we will have this field covered in a thorough manner. And we want 7,500 additional car owners, and prospective owners, in order to reach our 50,000 goal—"all paid in advance—all interested in motoring."

To ripen some present or prospective customers' interest in the social phases of motoring, in motoring styles, in motoring tendencies, in motoring progress, put their names on our subscription list. Motor Print is published monthly. Single copies ten cents. One dollar the year. Tear the coupon on this page, attach a dollar bill, enclose in an envelope and address:

# **Motor Print Company**

MOTOR PRINT COMPANY, 418-20-22 Sansom St., Philadelphia, Pa.

Enclosed find one dollar, for which please enter my subscription to MOTOR PRINT for one year, beginning with the issue.

Name\_

Address

418-20-22 Sansom St. Philadelphia, Pa.

# J-M AUTOMOBILE ACCESSORIES

Backed by the Guarantee of a \$5,000,000 Concern



## J-M (Mezger) Soot-Proof Spark Plug

The only plug that can not short-circuitbecause it is the only plug that is absolutely soot proof. Porcelain insulation becomes so hot at firing point that carbon is burned up the instant it settles.

Over 12 years on the market. Millions in use.

#### J-M Dry Batteries (Guaranteed)

If J-M Dry Batteries do not prove satisfactory, we will supply new batteries without cost.

This guarantee is the most convincing argument we can possibly offer to prove the high standard of J-M Dry Batteries for ignition work.

Made in three capacities: 20, 30 and 35 amperes, 11/2 volts per cell.

#### J-M Mobilite Electric Lamps Operated On Dry Batteries

For head, dash, tail and speedometer lights, and interior car illumination. Also for motorcycles, motor boats, camps, bungalows, etc.

Made of hard rubber, fitted with a Tungsten bulb, a powerful lens and reflector. Six 30-ampere J-M Dry Batteries will operate a set of four lamps from 300 to 420 hours.

### **Jones Speedometer**

Most accurate speedometer made. Operates on the centrifugal principle, therefore is unaffected by atmospheric changes.

Strongest in construction. Has fewest number of parts. Not affected by jars or bumps. Big speed figures—steady hand—clock dial. Trip and season odometer. Instantaneous trip reset.

#### J-M Non-Burn Brake Lining Gives Perfect Control of Car

Grips the drum the instant brakes are applied. Never slips. Unaffected by frictional heat, oils, water, grit, etc., because it is made of pure asbestos fibre interwoven with strong brass wire.

#### **Long Horn**

This mechanical horn never fails. It is not dependent on batteries, motor, bulb, wires or anything else that can possibly break or get out of order. Costs nothing to operate or keep in repair.

Made in various styles for all purposes.

Write our nearest Branch for illustrated Booklets fully describing these goods.

See Our Exhibit at New York Auto Show, Space D-2, Fourth Floor

## H. W. JOHNS-MAN

Manufacturers of Brake Lining; Spark Plugs; Electric Lamps; Speedometers; Vaporizers; Auto Locks; Horns; Fire Extinguishers; Dry Batteries; Fuses; Tapes; Packings; etc.

Cleveland Columbus
Col

Akron Albany Atlanta Baltimore Birmingham

Boston Buffalo Charlotte

Columbus Dallas Dayton Denver Detroit

Duluth Galveston Houghton Houston Indianapolis Kansas City

Los Angeles Louisville

Memphis Milwaukee Minneapolis Newark, N. J. New Orleans New York

Omaha Philadelphia Pittsburgh Portland, Ore. Rochester

Washington Wilkes-Barre Youngstown

THE CANADIAN H. W. JOHNS-MANVILLE CO., LTD., Toronto, Montreal, Winnipeg, Vanvouver

# Better, Longer Service From These Springs

The wonderful resiliency, "life" and elasticity of these springs cushion a car against jolts, and save the engine from racking. And this means longer life to engine and frame.

Ordinary springs are now rapidly becoming obsolete.

For no motorist cares to suffer the an-

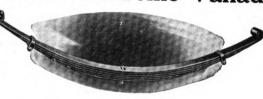
For no motorist cares to suffer the annoyance and expense of stiff, unyielding, easily broken springs, when he can secure such service as Cleveland-Canton Chrome-Vanadium Springs hold for him.



The new cross-rolled method of treating steel is used in these springs. The steel is rolled both lengthwise and cross-wise. By no other method can springs be made so free from blow-holes, seams and defects.

# Cross-Rolled Chrome-Vanadium

"Not a Bump In One of Them"



'Built for Life-Long Endurance''

Besides this intensely effective method of rolling, Cleveland-Canton springs are heattreated in oil. Then painstakingly fitted by hand.

They are put through tests of 40 tons to the sq. inch, a strain never demanded of even the largest motor trucks. But all this care, all this severe testing and inspection brings you a spring that makes the most comfortable riding you ever experienced, and through protecting the engine and delicate parts reduces upkeep expense and retards depreciation.

Write for the full facts today. You are entitled to know them.

Best Grade — Chrome-Vanadium Next Best — Special Analysis

CLEVELAND SE CANTON

The Cleveland - Canton Spring Co.

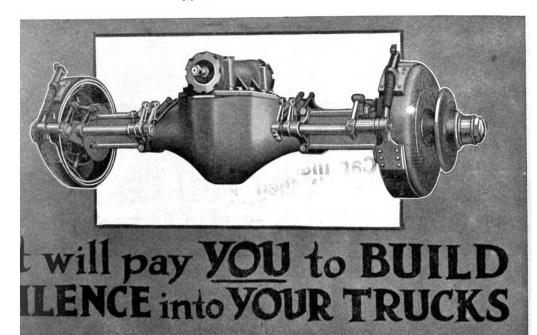
Eighty American Motor Car manufacturers will exhibit their product at the Grand Central Palace Automobile Show in New York this week. These cars will present the "last word" in automobile construction and most of them will be equipped with Hyatt Quiet Bearings. It is a significant fact that practically all American made automobiles have Hyatt Roller Bearings in some part of their construction.

Two books, one about motor car bearings in general for prospective purchasers, the other for automobile owners, will be sent on request

"Hyatt Quiet Bearinge"



HYATT ROLLER BEARING CO.



You Can Do It Best, and Most Economically, with

# Sheldon Worm Gear Drive

The day is now in sight when the discriminating motor truck buyer will insist upon worm drive. He realizes that the elimination of noise means increased efficiency. He knows that the worm drive is not dependent upon delicate adjustments; and that its efficiency actually increases in service. Wear in any other form of drive causes extreme noise, does not have this effect upon the worm and worm wheel.

All the quality of design and workmanship that has made SHELDON SPRINGS and SHELDON AXLES famous is built into SHELDON WORM DRIVES. The worm is almost indestructible and will stand years of wear; the wheel is of phosphor bronze. SHELDON KNOWLEDGE and SHELDON EXPERIENCE make these the best obtainable.

In addition to the silence of the truck, think of the neatness, the simplicity, the efficiency—that are distinct advantages of the worm drive.

Remember that every noted European manufacturer of commercial vehicles is using worm drive. These European manufacturers have proved that the long life, quiet running and high efficiency of the worm drive are sufficient reasons for its

And if you desire still further evidence of the desirability of worm drive as an asset to greater efficiency and increased sales value of your trucks—write us.

# SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

Chicago Office 68 E. 12th St. San Francisco Office 444 Market St.

Detroit Office 1215 Woodward Ave.



#### Every Rauch & Lang Electric Car

presents a quiet richness of design and finish that outrivals that of any monarch's conveyance, whether the exquisite Sedan Chair of a Marie Antoinette or the imposing state coaches of present-day rulers.



Three Types of Control— Front, Rear, Selective Dual

Select the position from which you desire to drive according to the number of passengers. Controls and brakes are automatically interlocked by merely turning front seat to natural position required by driving conditions.

## LEADERSHIP

To hold for 60 years the recognized supremacy in all vehicle construction-

To initiate new standards in engineering, design, mechanical perfection, and luxury of appointment in each successive era—

To possess the ability to combine these in master-productions that embody the genius of the artist and the skill of the finished craftsman—

This is efficiency; this is true leadership—the factors that make the Rauch & Lang Electric

Society's Chosen Car.

The latest Rauch & Lang introduces the famous Straight Type, Top-Mounted Worm Drive, guaranteeing reliability, maximum power efficiency with minimum cost of upkeep—no adjustments required. A car of wonderful silence.

Rauch & Lang agents in all large cities will gladly demonstrate.

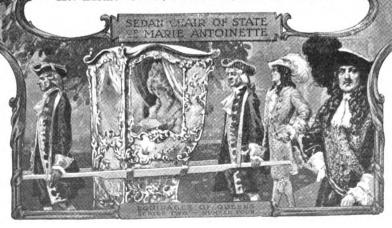
Seating, Controlling, Breaking and Top-Mounted Worm-Drive features are exclusive with Rauch & Lang cars, and, as well as the design of the car and other details of construction, are fully covered by United States patents pending and granted.

# The Rauch & Lang Carriage Company, 2226 W. 25th Street Geyeland

BRANCHES: New York, 1800 Broadway; Minneapolis, 1207 Harmon Place; Kansas City, 3501 Main Street

#### Turkish Room Waldorf-Astoria

Rauch & Lang cars will be exhibited in the Turkish Room of the Waldorf-Astoria Hotel during the Grand Central Palace Show.



#### Grand Central Palace Show

And also on exhibition in the Electric Vehicle Section at the Grand Central Palace Show.



# Cadillac again awarded the Dewar Trophy

Europe's highest Motor Tribunal pronounces 1914 Cadillac'mechanical achievements to be the greatest of the year, demonstrating the advancement of the industry

In our first announcement of the 1914 Cadillac, and its two-speed direct drive axie, we said:—"The Cadillac is about to endow the motor car with A new element of efficiency, A new quality of luxury, A new source of economy."

Studies of economy.

After several thousand purchasers had received demonstrations of the truth of this prediction, we said in a later announcement:

"Motoring as you know it, and motoring as the owner of a 1914 Cadil-lac knows it, are two distinct and different things."

And we added, that the Cadillac owner was enjoying luxuries to which you must re-main a stranger as long as you did not drive a Cadillac.

But we did not dream when we wrote the words, a that so distinguished an endorsement as the second award of the Dewar Trophy was close

You will recall that the first award of the Dewar Trophy to the Cadillac pronounced it the most thoroughly standardized car in the world.

In the test, three Cadillac cars were en-tirely dismantled, all of the parts thor-oughly mixed, and eighty-nine parts re-moved from the heap and substitute parts provided.

The three cars were then re-built into per-fect running condition from the haphaz-ard heap—wrenches and screwdrivers be-ing the only tools necessary.

Standardization was defined to mean in this test—as it always has meant—that every Cadillac part was exactly like every other part of its kind.

It did not mean nearly like it or almost like it, but absolutely like it, down to the one-thousandth part of an inch, where that degree of accuracy was essential.

that degree of accuracy was essential.

In other words, that there was complete interchangeability, perfect alignment of parts and units, perfect harmony in their operating relations with each other, and a total absence of ill-fitting joints and hearings.

bearings.

The Cadillac is the only car which has ever passed this tremendously significant test of what constitutes standardization; and the award to the Cadillac was the only one ever made upon such a test.

And that fact lends especial significance to this second award of the same trophy to the same car, but from a new angle of analysis.

It is one thing to feel sure that your man-ufacturing principles are sound and sci-

entific.

It is another, and a more pleasant thing, to have that fact almost universally appreciated by your own countrymen.

But it is gratifying in the extreme to have the approval of your own nation reinforced by an international verdict.

You, as a Cadillac owner—present or prospective—can take just pride in this second award of the Dewar Trophy,

It is more than a Cadillac achievement—it is a tribute from high sources to American skill and to American engineering initiative.

The Royal Automobile Club, which conducts the contests for the Dewar Trophy, is the most conservative tribunal of its type in the world.

The Dewar Trophy is the motor classic.

It is awarded for the most distinguished achievement of the year, dem-onstrating the advancement of the industry.

It takes into account manufacturing principles as well as performances.

Sir Thomas Dewar, when he instituted the

Trophy, had it in mind to seek out, each
year, the car of super-excellence.

So the awards are as disinterested, and as scientific, as the awards of the Nobel Prize in a totally different field of en-deavor.

e may all of us feel justly reinforced, therefore, in our good opinion of this splendid American car, the Cadillac.

We may feel that its virtues have not been overstated.

We may all feel that these announcements have not overdrawn the advantages of the latest Cadillac development, the Cad-illac two speed direct drive axle.

It was not merely the point-by-point per-formance of the car over give-and-take roads for a thousand miles.

It was not merely the certainty and the endurance of the electrical devices in self-cranking, lighting and ignition.

It was not merely the remarkable record of 17.17 miles per gallon of gasoline (notwithstanding repeated stops and starts in testing the electric cranking device).

It was not alone the astonishing record of more than 1,000 miles per gallon of lu-bricating oil.

It was not only that the two-speed direct drive axle was a material factor in making possible these results; and that it gave to the word "luxury" a new meaning as applied to motoring.

It was not only the perfect record in the shifting of the rear axle gears from high to low and vice versa 520 times, by means of the electric shifting device.

means of the electric shifting device.

No, the Dewar Trophy was awarded to the Cadillac for the second time—and the Cadillac is the only American car which has ever received it, and the only car in the world to which it has ever been awarded twice—because the Cadillac is the Cadillac, because it is what it is, and the cause it does.

It issalf to be the car of all acquides unercard.

Because the Cadillac proved itself to be the car of all-around superexcellence as a complete entity.

Because it proved its dominant characteristics to be those which make most for all-around constancy and serviceability. Because, as we have said, no other car rides or drives like the Cadillac.

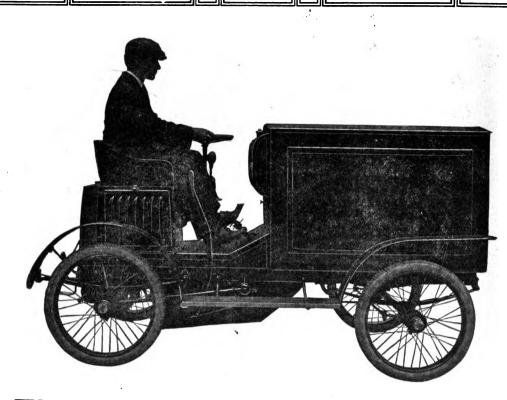
Because, in fact, it is the Standard of the World.



THE DEWAR TROPHY

CADILLAC MOTOR CAR CO., DETROIT, MICH.





# The Motokart Is Not A Cyclecar

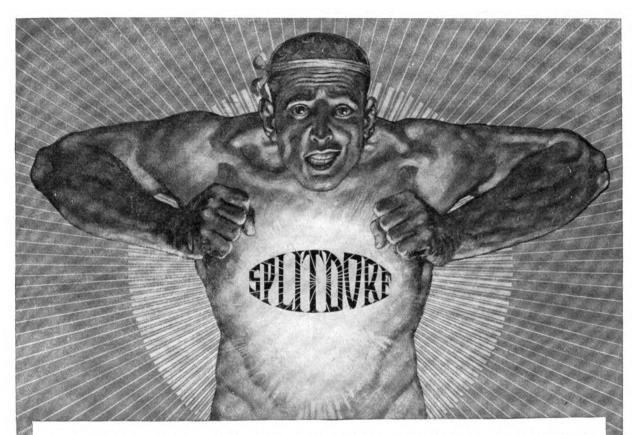
in the generally accepted meaning, it is NOT a miniature pleasure car converted to commercial usage. It WAS the first smaller than standard four wheel parcel delivery wagon built in the United States. IT IS STILL the only car of its type built exclusively for commercial purposes. A chassis ideal for pleasure usage can never successfully be made the basis for a delivery car, the difference in requirements is too radical. We know nothing about pleasure cyclecars, but have devoted ourselves exclusively to the purpose of producing the best possible parcel delivery car at a price within every storekeeper's reach—\$400.00. Let us tell you how well we have succeeded.

# TARRYTOWN MOTOR CAR CO., Inc.

Factory: Tarrytown, N. Y.

General Offices: 1790 Broadway, New York City

Agents wanted in all unoccupied territory



THE SPLITDORF ELECTRICAL COMPANY faces the ignition problems of the future with the confidence of a rejuvenated giant girded to accomplish the most herculean tasks—

with stronger frame as represented by vastly improved manufacturing methods and greatly augmented manufacturing facilities—

with a keener head and riper knowledge—thanks to accumulating years of hard practical experience—

with sinews and muscles of greater suppleness and strength owing to the enjoyment of unlimited financial resources—

with more far-reaching arms as indicated by the ever-increasing number of branch houses and distributing centers—

with a heart more insistent than ever to render

real service to the consumer at thoroughly equipped service stations—

with a mind bent upon supplying ignition units of magnetos, plugs, transformers, coils, lighting and starting outfits, etc., better in design, in material, in manufacture and in every day usage than the best—

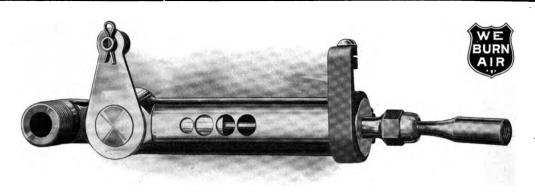
and with a perfectly healthy system that is the real foundation of the success of SPLITDORF controlling interests—an organization drilled and trained and geared like a wonderful piece of machinery—a vital, breathing, insistent force, irresistible in its confidence, strength, intensity and loyalty.

A full line of SPLITDORF up-to-the-minute magnetos, transformers, plugs, electric lighting and starting outfits, etc., on exhibition at

New York Show, Grand Central Palace. Chicago Show, Coliseum and Armory. Spaces 60 and 73 Spaces 56 and 73

SPLITDORF ELECTRICAL COMPANY

Factory; NEWARK, NEW JERSEY



HE Empire Gasoline Economizer is not a fad; it is a scientific aid to better motor car service.

It is not a "knick-nack" to buy because you are an automobile enthusiast; it is a vital help to better efficiency.

The Economizer is built on as scientific a basis as is the carburetor; its work is just as important.

Air is mixed with gasoline to form the vapor which when exploded propels your motor car.

Air is just as necessary to the explosion as is the gas.

You cannot explode liquid gasoline with a spark; it will only flame and there is no power in flame.

Because no carburetor has ever been made that controls the air at all speeds of your car, it is plain to see that somewhere the explosion approaches the "flame" point.

The carburetor is adjusted to certain speeds, weather, grade of gasoline, traffic conditions, etc.

There is no limit to the varying conditions that arise in just one mile of driving; and each variation calls for a different gasoline mixture.

Your carburetor is a "mixing pot" and is not intended as a "regulator" of the mixture.

The Empire Gasoline Economizer is an automatic regulator of the gas and air mixture; it acts with the throttle; meeting every condition to insure perfect combustion and the greatest power from the chargeSee what that means!

It means that instead of increasing speed or power with added gasoline; it meets the additional task with added gasoline and air.

It controls the mixture; it holds back the rich gasoline vapor and mixes with that vapor additional air; to take care of the increased speed or power demand.

In other words it burns air! Absolutely. Here's what you gain.

You get every possible bit of energy from each ounce of gasoline.

The cylinder walls and plugs are kept free from carbon caused by the smoke of too rich a mixture.

You get a hot spark at all times because of clean plugs.

You keep your engine cool—it's flame that heats an engine-and there is no flame.

You get more miles to the gallon of gasoline.

You save money—you get a higher efficiency from your car.

It costs \$10.00.

Suppose you use 5 gallons of gasoline a day at 17 cents—that is \$5.95 per week.

The Economizer will save you from 20% to 80%.

It will pay for itself in two weeks; in cash and in ten miles; in satisfaction.

Write at once for our booklet on Motor Car Economy.

We've prepared it for the show, but we will send you an advance copy.

Sold on a Satisfaction Guarantee. Money back if it does not "make good"

# BROWN-TAYLOR-GREENE COMPANY

1323-25 South Michigan Avenue, Chicago, Ill.

See Empire Economizer in the "Vesta" Exhibit at the New York Show.

We are closing with responsible agents for State rights



Tire-making is like aeroplaning. It requires experience, a trained and careful hand, and an absolute knowledge of quality in materials. The masters in both professions are those who survive. Kelly-Springfield Tires and Tubes have been longest in the field and they still are above all others.

#### Kelly-Springfield Tire Company

Corner Broadway and 57th Street, N. Y.

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detroit, Cincinnati, San Francisco, Los Angeles Cleveland, Baltimore, Seattie, Atlanta, Akron, O., Buffalo.

The Hearn Tire & Rubber Co., Columbus. O. Boss Rubber Co., Denver, Colo.

Boss Rubber Co., Denver, Colo. Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La. Central Rubber & Supply Co., Indianapolis, Ind.

H. R. Olmsted & Son, Syracuse, N. Y.

Bering Tire & Rubber Co., Houston, Texas. Todd Rubber Co., New Ha-

ven, Conn.

Atkinson Tire & Supply Co.,
Jacksonville, Fla.

C. D. Franke & Co., Charleston, S. C.

ton, S. C.

K & S Auto Tire Company,
Limited, Toronto.

# Do Your Own Welding!

Save time and money on repair jobs! Don't send out your repair work. You can now do it yourself - and save a lot of time for your customers and money for yourself.

Don't buy and wait for new parts! You can make old parts as good as new by using the

## Cox Welding Outfit For Welding and Carbon Removing

Complete in every detail. Will do every possible welding job. Very simple in construction. Can be used on parts of iron, steel, brass, bronze and aluminum. Any average mechanic can become adept in its use in a short time. We furnish complete instructions with each outfit. It is safe and sure. Every job you do means—Extra Profit for You.

The outfit will pay for itself many times over. It means quick repair work—and all of it done in your shop!

The Cox Outfit is not only excellent for welding, but it can also be used to Quickly and Completely Remove Carbon from Cylinders!

Thus you have a dual outfit—a profit maker two ways! Its use is doubled. It saves time in two ways—and produces two profits!

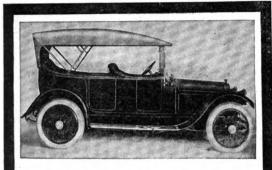
Send for free Catalog and full information—NOW.



SEE OUR EXHIBIT AT THE NEW YORK SHOW

COX BRASS MFG. CO.





See It At the Shows!

The only top that can be raised or lowered with ONE HAND—and it can be done in less than ten seconds, too! Raised from within or from outside the car.

#### MODERN EQUIPMENT DEMANDS THE SHARRER

The old style top is out of date. Today motorists want the latest in comfort and convenience.

The one top which will satisfy this need is the SHARRER. It is a big factor in driving home a sale. The more progressive manufacturers are adopting it for 1914.

To Automobile Manufacturers: We are pre-pared to supply sockets, assembled frames, com-plete tops, or will lease shop rights at prices you To Automobile Manufacturers: cannot turn down. Let us quote you.

To Top Manufacturers: We have an interesting proposition for you regarding manufacturing rights.

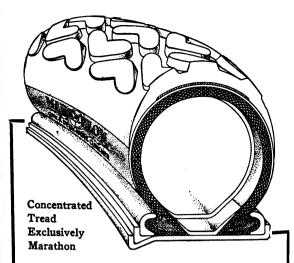
The SHARRER is fully covered by patents and we guarantee to protect you.

We are exhibiting at the New York Automobile how. Space D-177 a, 4th floor. We'll be at Show, Space D-177 a, 4th floor. Chicago, too.

#### THE SHARRER PATENT TOP CO., Inc. 245 West 55th St., New York City

Telephone, Col. 6590





## **Exclusive Sale Marathon Tires**

Think what it means to control the sale of the Mara-

Think what it means to control the sale of the marathon Tire in your city—this most extraordinary tire—a tire wholly in a class by itself.

Right now, Mr. Dealer, you are figuring how to make more money for 1914. Consider this: Which tire is most profitable to you—a make that every other dealer in your town sells, or the MARATHON 4,000 MILE TIRE that you can sell exclusively?

## Why You Haven't Made Money in Tires.

You have handled what every other dealer handles. Competition is keen. Your competitors want business and they begin to cut prices. To make a sale you must cut below their price. That's why you have not made money on tires.

#### Marathon Exclusive Sale Plan Eliminates Price Cutting

Cutting

We will give the exclusive sale of Marathon tires and tubes to one good dealer in every town or city.

That eliminates price cutting. Protects you and insures you of a good profit; and it insures the tire user of better service.

Selling Marathon tires you have no reason to cut prices—no necessity. No one else in your territory can get the sale of Marathon tires. That's why you can make more money selling Marathons.

#### Quality Maintained

We shall absolutely maintain Marathon original quality. Our policy is to give the highest quality possible and charge the

lowest price consistent with that quality.

In the face of the new cut prices, can others maintain quality—and will they?

#### Factory-Insured 4,000 Miles

We actually factory-insure the Marathon tire. We absolutely build quality—long mileage—service into Marathon, by slow, careful hand building, using finest materials obtainable. You see why we can guarantee this tire for 4,000 miles.

#### The Concentrated Tread

Note how the Marathon angle non-skid tread is concentrated for hard service and economy. Note the built-up center and the tapering sides. That's an ex-clusive Marathon feature. But no doubt others will soon copy it.

no doubt others will soon copy it. The great angle tread is the master of wet streets, alippery and sandy roads. The angles grip in all directions. It's the year 'round tread. Write us for our exclusive proposition and get a sample section of the tire and pure gum Red Tube.

Then judge which tire and tube you should sell.



## The Marathon Tire & Rubber Co.

CUYAHOGA FALLS, OHIO

DISTRIBUTORS IN MOST LARGE CITIES

(110)

American made for American trade

## **NEW DEPARTURE**

Guaranteed

# **BALL BEARINGS**

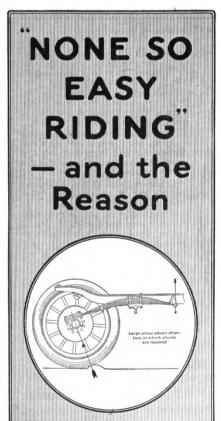
To facilitate supplying demand for garages, dealers and owners, for New Departure ball bearings, the following distribution agencies are announced, where stock of these bearings is carried.

Ahlberg Bearing Co

Child, Day & Churchill Co1215 First Ave., Spokane, Wash. Automobile Supply Co
-------------------------------------------------------------------------------

## The New Departure Mfg. Co., Bristol, Conn.

Western Branch, 1016-17 Ford Bldg., Detroit





## A KING Owner Is Our Best Sales-Agent

Every time he drives his car or compares it with others of near price he is convinced anew, and convinces his friends, of the KING'S high value for

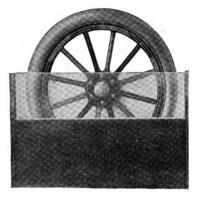
#### \$1095 WITH EQUIPMENT

Famous Ward Leonard Starter and Generator \$100 net additional Rough Roads Smoothed Out

by the KING'S FLOATING CANTILEVER SPRINGS which are a modification of those used with such notable suc-cess by the Lanchester Motor Car Company of England. They are set at right angles to the direction taken by the e-sistance offered to road shocks. The arrows in the illustration show how this adjustment receives and three had jars. These springs make auxiliary shock absorbing devices wholly unnecessary, give ample road of road-dom from 'side swing.' guarantee complete comfort to occupants, and assure a long, a commitcal life to car and tires. KING MOTOR CAR COMPANY, 1300 to 1324 Jefferson Avenue, DETROIT, MICH.



### The Varnish That Defies Soap See it at the Automobile Show



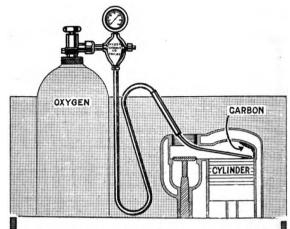
Look for the wheel revolving in the soapy water at our booth at the National Automobile Show at Grand Central Palace, New York, from January 3d to 10th. It will prove to you that

#### VALENTINE'S VANADIUM CHASSIS FINISHING

alone is absolutely unharmed after weeks of exposure to soap and water. It resists mud, road oil and grease. We should like to send you free our booklet "The Care of the Car."

#### Valentine & Company

456 Fourth Ave., NEW YORK 343 S. Deartern St., CIRCAGO 74 Pour! St., DOSTOR



### Perfect Carbon Remover \$10

Will remove ALL carbon from cylinders. Easily and in few minutes. Equal of any high-priced outfit. All parts guaranteed. Keeps up efficiency of cars and trucks. BIG MONEY MAKER for garages.

#### Price \$10

(without oxygen tank)

Usual price \$15. As we sell for cash only and no accounts carried, customers are given \$5.00 off on every outfit. Express companies allow inspection—you take no chances.

Sent prepaid - cash with order or C. O. D.

#### OXYGEN DECARBONIZER CO.

301 River Street

TROY, N. Y.

Send for Information

#### THE B. & W. CRANK LOCK



Investigate the B. & W. before your customer's car is stolen. Every motor car owner needs constant and complete protection against the thief and joy rider.

The only Positive Crank Lock manufactured that absolutely locks the crank in engagement with crank shaft, making it an impossibility to start motor

by pushing car, towing or by jacking up the rear wheels.

It is a Positive Locking Device and can be tached by anyone in ten minute's time.

The B. & W. Lock is finished in black enamel and provided with a strong lock and two keys. To be attached to the front axle as shown in cut.

Price \$1.50

Order from your Jobber or write as

UNIVERSAL MANUFACTURING CO.



Space Contributed by Motor World

## The Lincoln Highway

(Copy Contributed)
By
Elbert
Hubbard

A DUSTLESS, mudless, skidless highway from the Atlantic to the Pacific—that's why I should cease to worry!

Behind the project are over 100 firms and corporations who do big things. Over \$5,000,000 are already pledged or in hand.

Subscriptions are asked from every cheerful good sport who owns an automobile and loves the smell of gasoline. And doesn't that take in pretty nearly all of us?

Any man who owns a machine and doesn't get in on this is a Piker from Pikersville.

It's a privilege to get in this glorious company and I wish that every reader would send a five spot or more today.

Enjoy the sweet satisfaction of knowing that you are in this glorious company who are making the world a fit place for gentlemen to live in.

Good roads are the most unselfish enterprise in the whole world of human betterments.

Send your contribution to

LINCOLN HIGHWAY ASSOCIATION DETROIT, MICHIGAN.

Radiator Emblem, Membership Card and Certificate
Sent on Receipt of Remittance.

# ZENITH

# "Gives Standard Carburetion"

SIX years on the European market—and two years on the American market—without a change. WHY?

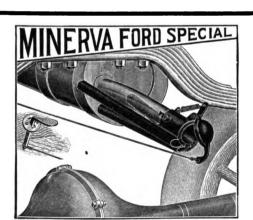
To have a record like this and show a constant growth in sales a carburetor must embody some vitally important principle—that uniformly makes good.

Car manufacturers and dealers are invited to familiarize themselves with the reasons why.

Write and we will tell you

#### **TENTH** CARBURETOR CO., Detroit, Mich.

Mercedes Repair Company, 159-161 East 54th Street, New York Motor Parts Co., No. 185 Columbus Avenue, Boston, Mass. Motor Parts Co., No. 818 North Broad Street, Philadelphia, Pa. Fawkes Auto Company, Minneapolis, Minn. René J. Marx Company, No. 1062 Geary Avenue, San Francisco



## FORD DEALERS

The MINERVA FORD HORN installs in five minutes and sells for five dollars complete. It's an extremely saleable specialty with a decidedly attractive profit.

You can make more on this horn because we give you the benefit of our quantity production.

The horn is made right of non-cerrosive metal. It will not clog and is instantly on the job with a clear, mellow yet WARNING NOTE.

Your pocket and your customer will like this horn.

Write for agents discount sheet

MINERVA HDW. MFG. CO. Minerva Ohio

G. A. ASHTON CO, Northwestern Representative 1577 Selby Ave., St. Paul, Minn.

# Ford Owners, Dealers, Agents

Here's the Greatest Ford Accessory Converts the Ford Into a Cozy, Classy, Comfortable Limousine



Can Be Detached in About One Hour

Fits All 1912-

'13-'14 Ford Touring Cars

ONSIDER the luxury and comforts of being protected from the elements—you and your passengers. Equip your Ford with a Limosette and be assured of all the advantages of the most expensive limousine. The Limosette fits snugly, is storm and wind proof, does not jar or rattle, and it makes your car only 75 lbs. heavier, after taking off your present fittings.

THE cost is trifling—less than one-half the price of a built to order body. Durably constructed in colonial design. Real classy. Interior inish is genuine mahogany. Upholstered in neat broadcloth. Electric dome light. Full length doors and unlimited vision. Nothing has been overlooked in equipment and finish, thus insuring Ford owners better service and year 'round riding comforts.

Agents and Dealers Write for terms. We have a splendid proposition for live agents--EXCLUSIVE TERRITORY

The Mandel Limousine Company
Congress and Laflin Streets, Dept. D Chicago, Ill.

## FORD ENGINE STARTER—\$9.00

You do not have to leave your seat to start your Ford Motor when equipped with this Starter.



All that is necessary is to pull the lever. Will absolutely turn your motor past firing compression every pull.

Can be easily attached \$9.00 install same. To be had at all dealers by anyone in about one hour. Absolutely no mechanical work necessary to or direct on receipt of price.

DEALERS: WRITE FOR OUR SALES PROPOSITION TODAY.

Universal Manufacturing Co., Racine, Wis.

# Tire Dealers, Jobbers and Garagemen

We have the greatest Tire Proposition of the age to offer live concerns.

Do not answer unless you are really interested.

For full information

HENDERSON TIRE CO. Buffalo, N. Y.

# Billings & Spencer

In the manufacture of trademarked products are combined the "thorough" methods of the pioneers of half a century ago with the modern scientific and specialized methods of today. The result is modern tools and forgings of tested durability and service

Blue prints receive immediate atten-

Prompt shipments assured. Write for catalog of our tools and forgings for automobiles and motorcycles.

The Billings & Spencer Co. HARTFORD, CONN.

## FORD SEAT-COVERS

If you have a Ford car in your garage, you have a neat profit awaiting you.

You can retail our seat-cover at a price that will put it on every car of every one of your Ford customers.

And at the same time your profit is decidedly attractive.

The fit is guaranteed and you can count on high-grade workmanship and immediate delivery. For our mutual benefit let us suggest that you drop us a postal for our agent's proposition—it's GOOD. We also make a complete line of tops and trim-mings.

CENTRAL AUTO TOP COMPANY 230 North Illinois Street INDIANAPOLIS, IND.







A quiet, luxurious hostelry in the midst of New York's rush and gayety. Near the theatres in the evening, and a pivotal point from which to transact your business during the day.

"Comfort Without Extravagance"

# Satisfaction First

SPECIFY Bosch Magneto and Bosch Plugs on the cars you sell—your customers then will enjoy confidence, the result of having a reliable system, a satisfactory system, the most used of any system—they take no chance when it's Bosch.

Be Satisfied Specify Bosch

Correspondence Invited

Bosch Magneto Company 224 West 46th Street, New York



# Look to your Tires

YOU can take a thousand miles of service out of a set of tires by driving them insufficiently inflated over ten miles of road.

# The New Positive Lock Stop Twitchell Air Gauge

Insures you against premature wearing out of tires.

It is TIRE INSURANCE FOR ONE DOLLAR



For Sale by Jobbers, Dealers, Garages or

The Twitchell Gauge Company
1202 Michigan Avenue CHICAGO





\$900

EMPIRE
The Little Aristocrat

Completely Equipped

New Series Model 31, 110 Inch Wheel Base

A larger, more beautiful car, with every luxury and equipment. Increased production brings the price down to \$900.

Advance catalogue with complete details is ready

But a copy of the illustrated story of the Transcentinental Empire. Ferty pictures
EMPIRE AUTOMOBILE COMPANY, Indianapolis, U. S. A.

# Abbott Detroit

The best car value in the market and a 10% greater net profit for the dealer are the two big inducements we offer live aggressive direct agencies. Write today.

ABBOTT MOTOR COMPANY

Betroi



Michigan U. S. A.

# GOOD YEAR

This name on Automobile Tires and Rubber Accessories signifies inherent qualities of material and workmanship that insure the maximum of service at the minimum of expense.

THE GOODYEAR TIRE & RUBBER CO.
AKRON, OHIO

(673)

# Stewart Speedometer

MAGNETIC TYPE

Approximately 450,000 cars will be built during 1913 and 400,000 of these will be equipped with a magnetic type speedometer—like the Stewart.

THE STEWART SPEEDOMETER FACTORY
1949 Diversey Boulevard Chicago, U. S. A.

Service stations in every important city in the world

# Maxwell Motor Co., Inc. DETROIT, MICHIGAN

#### Maxwell District Offices

Long Island City, N. Y.; Boston, Mass.; Philadelphia, Pa.; Minneapolis, Minn.; Dallas, Tex.; Omaha, Neb.; Des Moines, Ia.; Atlanta, Ga.; Charlotte, N. C.; San Francisco, Cal.; Cleveland, Ohio.



THE circulation of the Motor World is a guaranteed one, sworn to by an affidavit, which will be sent in detail to any one upon request











## Apelco Electric Lighting System

When your car is Apelco electric lighted as well as started you'll enjoy motoring as you never have before. Simple in construction, reliable and dependable, economical to operate.

Send for full information. There's an Apelco Motor Boat and also a House Lighting Outfit that's just as reliable. Apelco products are the standard by which others are judged.

The Apple Electric Company 64 Canal Street Dayton, Ohio

# RUTENBER

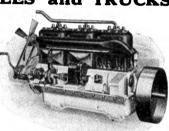
Manufactured since 1901 for high grade

#### **AUTOMOBILES** and TRUCKS

3¼ x 5¼ four and six cylinder, 4½ x 5½ four and six cylinder Standard or Unit, and 4 x 4, 4½ x 5 and 4¼ x 5 Standard Types. All L Head 4 Cycle.

Manufacturers are invited to investigate our service and our facilities. Literature on request.

Rutenber Motor Co. MARION, INDIANA





Multibestos is made of the finest asbestos firmly inter-woven with brass wire. It has the greatest efficiency and durability.

#### STANDARD WOVEN FABRIC CO., Framingham, Massachusetts

BRANCHES—New York, 276 Canal St.; Philadelphia, 1427 Vine St.; Chicago, 1430 Michigan Blvd.; San Francisco, Fred Ward & Son; Boston, 903 Boyleston St.



Built in various body types \$1250-\$1700-\$2000

CARTERCAR COMPANY, Pontiac, Michigan



#### MERCER

We invite your inspection of all Mercer models at New York Automobile Show, Jan. 3 to 10-Space B-9, Grand Central Palace.

Series II, Close-Coupled Five-Passenger, Series J, Raceabout

Series M, Large Five-Passenger, Series O, Runabout

Mercer Automobile Co. 700 Whitehead Re

# Cylinder 65 H. P. sipped with Vulcan ctric Gear Shift. Four Cylinder 40 H. P. Equipped with Vulcan Electric Gear Shift.

Our advertising campaign will send a buyer into your show-room more than half convinced that he should own a Haynes; the sale, however, results only from a successful demonstration; it is our firm belief that, as a Haynes dealer, you possess more than a sufficient number of convincing arguments to make every demonstration result in a quick and profitable sale.

May we tell you why we believe this?

THE HAYNES AUTOMOBILE CO., 1 Main Street, Kekeme, Ind.

## Pullman "Little Six"

The Only Genuine Streamline Motor Car Built in this Country

This epoch making automobile with VULCAN ELECTRIC GEAR SHIFT, WESTING-HOUSE ELECTRIC STARTING AND AND, LIGHTING, BOSCH MAGNETO, and WIRE WHEELS. Priced at only \$2400. Without Electric Gear Shift—\$2250.

"FOURS" and "SIXES"-\$1775 to \$2850 Write or Wire

PULLMAN MOTOR CAR COMPANY, York, Pa.

#### "THE TUGBOAT OF LAND COMMERCE"



KNOX AUTO CO.,

SPRINGFIELD

The new KisselKar 48 "Six" at \$2350, with the big 60 "Six" at \$3150, give the KisselKar real leadership in the "Six" field. Strikingly handsome cars of unusual comfort. Extra liberal wheelbase—roomy tonneaus—powerful, flexible motor—big wheels and tires. Fully equipped—electric lighted and started—left hand drive, center control.

The KisselKar 40 "Four" at \$1850 is the leading value in its class.



Write for catalog

KISSEL MOTOR CAR CO. 159 Kissel Avenue HARTFORD, WIS



# The Standardized Car

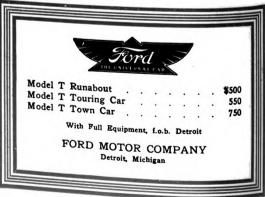
The car that started the stampede to standardization

A Cole franchise is a valuable asset to any dealer. Find out about it.



Cole Motor Car Co. of Indianapolis





Any Kind Rind Ring Clincher Q. D. Stock, or to Blue Print Channels

For Automobiles, Motor Trucks, Aeroplanes, Motorcycles, Bicycles.

We Also Make Axles and Hubs.

MOTT WHEEL WORKS, Utica, N. Y. R. B. ABBOTT SALES CO., Sales Agents, Detroit

Rudge Whitworth Detachable Wire Wheels

fitted with

Houk (Quick Detachable) Rims

Guaranteed the Best in the Worla

Geo. W. Houk Company 5003 Lancaster Ave., Philadelphia, Pa.

## The Atwater Kent Ford Ignition

assures perfect synchronization at all speeds; eliminating preignition and overheating—starts easily with a quarter turn of the crank and frequently without cranking by means of the starting button on the coil. It will, in addition, wonderfully increase the power, speed, flexibility and hill-climbing ability of the Ford car and is easily installed without any necessary machine work.

Write for Booklet "D" and prices.

ATWATER FINI MFG WORKS
4940 Stenton Ave., Philadelphia



# KELLOGG Tire Pump

Used and endorsed by makers of better cars. Write for "Air On Tap" and proofs of superiority.

Kellogg Mfg. Company, Main and Circle Sts. Rochester, N. Y.

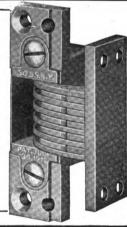
## Soss Concealed Hinges

for touring bodies, coupes, limousines, roadsters, etc., have an interlocking construction insuring strength, long wear, and absolute rigidity. The trouble avoided and time gained when hanging doors with "Soss Hinges" are important factors.



Send for catalog and full particulars.

SOSS Mfg. Co.
No. 435-443 Atlantic Ave.
BROOKLYN, NEW YORK

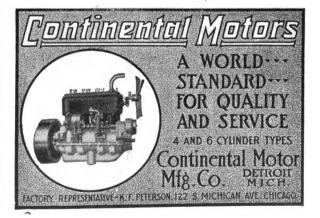


# American Axles

Found Only on High Grade Cars

THE AMERICAN BALL-BEARING CO.
Cleveland. Ohio





### **Quick Detachable** and Demountable Rims

Our new and improved manufacturing facilities insure quality products and prompt deliveries in large or small quantities.

Jackson Rim Company Jackson, Mich.

# Times Sq. Auto Co.

NEW YORK S. W. Cor. 56th St. and B'way

1210-12 Michigan Ave.

Motors, Bodies, Tope, Tires, Everything and Anything for the Automobile at Cut Prices

World's Largest Dealers New-Used Automobiles and Accessories

Send for "Our Price Wrecker"

Send Us Your Inquiries When in the Market for

## SHEET METAL STAMPINGS

Estimates Cheerfully Furnished

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"Care and Repair of Tires" contains a remedy for every tire emergency. Quoted as authority by American and foreign auto journals. While edition lasts a postal brings you a copy free.

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VOLUMNIZERS

Repair any casing or tube anywhere. Electric vulcanizers for use on lighting current—steam vulcanizers if electricity is not available. The only vulcanizers that any one can use safely because of the exclusive feature, an automatic temperature control that insures perfect repairs.

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Making Their Mark Everywhere

Pennsylvania Rubber Company

Jeannette, Penn.

#### METZ "22" ROADSTER \$475

The "gearless car"—no clutch to alip, no gears to atrip—completely equipped, fully guaranteed. 4-cylinder, 22½ H.P. water-cooled motor. Bosch magneto, artillery wheels, best quality clincher tires. Makes 5 to 50 miles per hour, 28 to 52 miles on 1 gallon of gasoline. Great hill write for Book "B." EXCLUSIVE SALE in your territory.

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L. J. MUTTY COMPANY, Boston

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Now standard on fourteen makes of America's leading cars and still growing. Send for blue-prints and specifications—or consult our engineering department.

HESS SPRING AND AXLE COMPANY CARTHAGE, OHIO



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Protect Builder and User Alike

Large European and American Plants Assure Prompt

Deliveries.

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# Saved!

Weed Tire Chains enable you to safely make sharp turns and quick stops when a momentary loss of control means loss of life.

The above picture illustrates one of the numerous situations in which you may be placed during bad road weather — when suddenly someone appears directly in your path and in a fraction of a second you must make a sharp turn and apply the brakes. It is then you require a firm unfailing grip on the road which can only be obtained by equipping all tires with

# Weed Anti-Skid Chains

The Only Device that Absolutely Prevents Skidding

The memory of one accident deters future enjoyment in the use of a car. Why run the risk of such accidents and why forfeit the pleasures of motoring forever after, when safety can surely be yours by equipping all four tires with WEED CHAINS?

WEED CHAINS cannot injure tires because "they creep." Easily put on in a jiffy without the use of a jack or other tools. Directions packed with every pair.

## Universally Used

WEED CHAINS are generally regarded as the most profitable accessory for the automobile Dealer — Extensively Advertised — Easily Handled — Quick Sellers — No Dead Stock — No Dull Seasons—Liberal Profits—Satisfaction Guaranteed.

Attractive, Decorative, Convincing Hangers regularly supplied to Dealers upon request

At all dealers selling Auto Supplies

Weed Chain Tire Grip Co., New York

Manufactured in Canada by
DOMINION CHAIN CO., Limited, 137 McGill St., Montreal, Can.



# Friction is Wasting a Quarter of Your Gasoline

One quart out of every gallon is used just to overcome the rubbing, grinding, wearing friction in your car. If it were not for friction, you could go a third faster or a third farther on every gallon. A big part of this waste is in your transmission and differential.

# Dixon's Graphite

Transmission and Differential Grease, No. 677



Will convert most of this wasted wearing power into useful driving power by giving ideal lubrication to the gears and bearings. It has the right body to travel with the gears at all speeds without any drag. And the fine flakes of natural, unctuous graphite build up a thin lubricating veneer on the metal surfaces which protects them from wear.. The wear comes on the graphite veneer, which is constantly replaced as worn-not on the gears and bearings. Thus your car runs faster, smoother, more quietly and you save on gasoline and repairs. Send for the book "Lubricating the Motor," No. 23.

Made in JERSEY CITY, N. J. by the

# Joseph Dixon Crucible Co.

ESTABLISHED 1827

# For Sale — Wants — Exchange

S PECIAL ATTENTION given to repairing of auto radiators, lamps, fenders, windshields, tanks, and horns of every description. No matter how badly damaged the article may be we repair it to look and serve as new at a great saving of cost. Missing parts for lamps, glasses for windshields, and headlights, put in while you wait. We sell new lamps, radiators, bumpers, horns, windshields, etc., at 50% less than elsewhere. Nickel, silver and brass plating and enameling done at short notice. We always have bargains on hand. Write for particulars. Estimates given. HUDSON AUTO LAMP WORKS, INC., 1648-50 Broadway, New York City. Tel. 8194 Col. and 3864 Col.

RACING BODIES—We make them to fit any car. Seats, special and stock sizes; Radiators, Hoods, Tanks and Fenders. AUTO SHEET METAL WORKS, 1530 S. Michigan Ave., Chicago, Ill.

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A renewer and preserver of all old leather, rubber and pantasote tops and curtains. A fast black color that will not fade or wash off. THE COLUMBUS VARNISH CO... Columbus, Ohio.

GET List of Automobile Registrations direct from State House. Quickest and best daily service. \$45.00 for entire year, or at rate of \$4.00 per month. Special lists of all kinds promptly compiled. PETER DONNELLY, Box 180, Albany, N. Y.

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15 cents per line of six words cash with order.
— In capitals, 25 cents per line —

A market place where Dealers, Jobbers and Manufacturers may buy, sell or trade used care, parts and appliances and where help or situations may be secured at a nominal cost.

FORD Racing Type Bodies, we build them in several models. Also Hoods, Seats, Tanks and Fenders. AUTO SHEE1 METAL WORKS, 1530 S. Michigan Ave., Chicago, III.

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Dries in twenty minutes. THE COLUMBUS VARNISH CO., Columbus, Ohio.

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BROKEN CRANKSHAFTS, cylinders, crankcases, flywheels, gear teeth, pistons. perfectly welded and machined ready to replace. Guaranteed and references. Machinery up to 5 tons welded. ATLAS WELDING WORKS, 74-76-78 Irving Street, Rahway. N. J.

WELDING Plant, Cutting Plant, Carbon Removing Outfit. or a combination of all of these at from \$15.00 to \$175.00 for high or low pressure system. For full particulars address BERMO WELDING APPARATUS CO., Omaha, Neb.

ARE YOU in need of any additional help in any department of your business? Are you out of employment or looking for a better connection? Have you second-hand apparatus of any kind or do you want to buy second-hand material? Have you a factory site for sale or do you want to buy one? If so, use the Want and For Sale column of the Motor World. Six words to the line, fifteen cents a line. Advertisements can be inserted over a number when it is desired and identity of the advertise will be kept confidential.

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Makes a uniform black lining of all faded
and stained linings of tops and curtains. A
fast black color that will not fade or wash
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Columbus, Ohio.

A UTOMOBILE CYLINDERS reground, new pistons and rings fitted. Garagair compressors. CAST IRON BRAZING CO.. Manchester, N. H.

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PEERLESS MOHAIR TOP DRESSING Makes old, faded, water and greas stained tops look like new. Waterproofs leaking mohair, duck and canvas. Leaves the cloth soft and pliable. THE COLUMBUS VARNISH CO., Columbus, Ohio.

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# Motor Cars or Motor Trucks

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East 24th St., Lexington to Third Ave.

Largest Dealers in Horses in the World

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## AUTOMOBILE AUCTION

Every Thursday, at 3 o'clock P. M. (Christmas and New Years Excepted)

In Sales Arenas, 139-151 East 24th St.

Cars of both the pleasure and business types will be accepted the day prior to sale for exhibition in the NEW, WELL LIGHTED, SPECIALLY DESIGNED ARENA adjoining regular sales ring and will be offered for disposal on the day designated

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#### **5 PER CENT COMMISSION**

Will be charged on all sales of \$100 and over and a minimum fee of \$5 on each car selling for less than \$100.

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Don't wait for cold weather; be ready for it.

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Know the Heat of Your Motor While Driving ! MOTOMETER CO., Inc., 904 U. S. Rubber Building, B'dway & 58th St., N. Y.; Chicago Branch, 1322 Michigan Ave. Motometer Jr. \$5.00 for trucks and smaller cars

# Woodworth Treads

We will send any responsible dealer a pair on 30 days' trial. Write new. Good Agents wanted for unoccupied territory.

LEATHER TIRE GOODS CO., Niagara Falls, N. Y.

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" The Paper That Is Read, Not Merely Looked At"

It ought to be a regular weekly visitor in your office, Subscript. \$2.00 per year—a small price for a big value. Subscribe today.

Motor World Publishing Co., 1600 Broadway, New York

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### HAYES MANUFACTURING COMPANY

**DETROIT. MICHIGAN** 

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A tire filler 10 to 20 per cent. lighter than any other tire filler. A big proposition for dealers who are on the alert for more and better business. Write for details.

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ARE GOOD TIRES

We Specialize on

Finishing Crank Shafts Only

MICHIGAN CRANK SHAFT CO., Lansing

ERE-LONG YOU'LL USE

Cellular—Honeycomb—Spiral Tube Cooling Systems for Pleasure Cars — Trucks — Tractors.

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Ask Lewis about

valves We make valves exclusively—special heat-treated valves that "stand up" in service. Don't take chances. For anything in valves, write

Lewis Electric Welding & Mig. Co.
TOLEDO, OHIO

Look for us at New York Motor Boat Show

PERFECTION SPRING COMPANY **High Grade** 

specialists Spring Snspension

CLEVELAND, OHIO

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# Lower prices

## Diamond Squeegee Tires

made of Vitalized Rubber

Size	Smooth Tread Prices	Squeegee Tread Prices	Size	Smooth Tread Prices	Squeegee Tread Prices
$30 \times 3$	\$11.70	\$12.65	$34 \times 4\frac{1}{2}$	\$33.00	\$35.00
$30 \times 3\frac{1}{2}$	15.75	17.00	$35 \times 4\frac{1}{2}$	34.00	36.05
$32 \times 3\frac{1}{2}$	16.75	18.10	36 x 4½	35.00	37.10
$33 \times 4$	23.55	25.25	37 x 5	41.95	44.45
$34 \times 4$	24.35	26.05	38 x 5½	54.00	57.30

## "We never sold such a satisfactory tire in years"—garage owners say

The thousands of motorists-who are using Diamond Vitalized Rubber Tires are unanimous in their claim that they are the most economical and satisfactory tire money can buy.

Diamond Vitalized Rubber Tires have been put to the most severe tests and have made GOOD on all kinds of motor cars.

This reduction in price is made possible by the decreased cost of crude rubber—the high standard of Diamond quality will be maintained as heretofore.

## ask for Diamond Tires

In January 1912—two years ago we ran this advertisement.

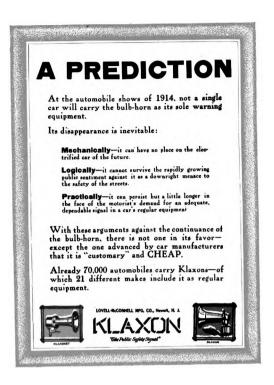
At the shows this year you will see that the prediction has come true.

You will find there not one car with the bulb-horn as sole warning equipment.

TODAY 66 cars are Klaxonized. In the list-with but one or two exceptions—is every high-grade car made.

Other cars carry what their makers call an "electric horn."

These operate on the familiar "buzzer" principle. They can be bought by car makers for \$1.25 to \$2.00—even less than the cost of a bulb horn.



#### ANOTHER PREDICTION

At the Automobile Shows of 1916, not a single car will carry an electric "buzzer" horn.

It is known in the trade as the "50% come-back" signal. This percentage at least is soon returned by dissatisfied users.

It is mechanically impossible to make an electric buzzer that will stand up.

Each vibration of the diaphragm means a hot electric spark between the points (O-O). Unless these points are made of platinum iridium—the

cost of which is prohibitive—they soon burn out and the buzzer is useless.

The NOTE of the buzzer horn has not sufficient carrying power to meet road conditions. Its diaphragm is merely jarred or "buzzed against" by a leaf spring (E) flapping against the rod (D). The resulting sound waves are weak and of short duration.

Indoors—in the dealer's show-room where the noise

is in the ROAD TEST that the motorist learns its inability to carry.

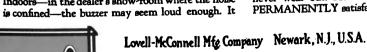
The Klaxon is not an "electric horn"

The Klaxon is a MACHINE—built to produce big clean-cut sound waves of great carrying power. These waves are made separately-each by a big swing of the steel diaphragm.

The swings are caused by the revolutions of a high-speed wheel (A) with specially designed cam faces (B-B)-driven by an electric motor.

These cam faces push against the button (C) which is in the center of the Klaxon diaphragm. The diaphragm is thus pushed forward and back 25,000 times per minute - producing the characteristic Klaxon note: loud, clear, penetrating.

Button and wheel are of glass-hard steel. They can never wear out. Hence the Klaxon guarantee of PERMANENTLY satisfactory service.



KLAXONET

"The Public Safety Signal



This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy. Digitized by GOC

## PACKARD SECURITY

The bridge builder's factor of safety is built into every Packard car.

Combined with luxury of motionsilence—certainty of performance—is durability far beyond the requirement.

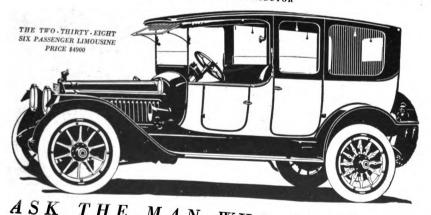
Six-inch depth of frame is typical of the maximum service quality in Packard construction.

Packard cars demonstrate their supremacy at the time when stamina is most needed.

PACKARD MAXIMUM SERVICE QUALITIES ARE EMBODIED ALSO IN PACKARD TRUCKS

## PACKARD MOTOR CAR COMPANY, DETROIT

LINCOLN HIGHWAY CONTRIBUTOR



THEMAN WHO OWNS ONE



A Trade Paper Giving the World's Motor News

Vol. XXXVIII No. 3

New York, January 8, 1914

Ten cents a copy Two dollars a year

BERRY VARNISHES



BERRY PROTHERS' VADNISHES

## A Tough, Tenacious, Elastic Coat That Prevents Rust or Corrosion

Either when applied clear, or mixed with pigment, LIONOIL perfectly protects metal bodies or parts.

It holds on to the metal with remarkable tenacity. Vibration cannot jar it loose or cause it to check or crack.

LIONOIL can be either air-dried or baked, for baking does not impair its remarkable elasticity.

As a rust preventive LIONOIL is not approached by any other material. In tests recently made metal panels coated on one side with LIONOIL were subjected for three months to a humidity of 95 at a temperature of 80 degrees. The unprotected metal was completely corroded, but not one speck of rust could

be found on the side protected by LIONOIL.

LIONOIL is transparent but can readily be mixed with French gray, black or other pigments without impairing in the least its durability or other good features.

If desired you can use LIONOIL for mixing your own primer, or first coat, or you can use it strictly as a rust preventive.

Send for demonstrating samples, on metal.

We also make the Raven line of black japans for hoods, fenders, tool boxes, lamps and all metal parts. Raven japans are now used on the highest grade European and American cars.

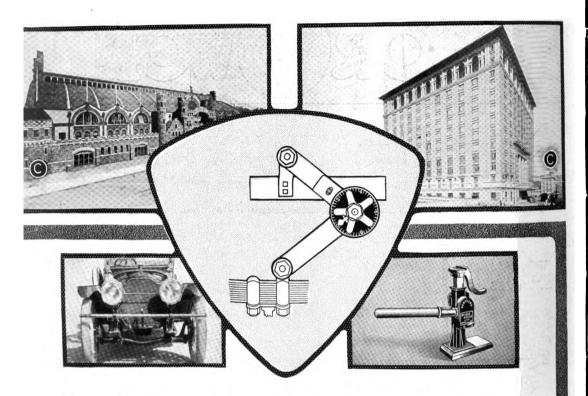
FACTORIES: DETROIT, MICH. WALKERVILLE, ONT. SAN FRANCISCO, CAL.

BERRY BROTHERS
World's Largest Varnish Makers

ESTABLISHED 1858 Branches in principal cities of the world.

Published Weekly by the Motor World Publishing Company, 1600 Broadway, New York

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## Hartford Accessories will be Exhibited and Demonstrated at Both Shows

FFICIENCY of equipment is as much to be desired in a caras efficiency of construction. The high degree of efficiency attained in Truffault-Hartford Shock Absorbers, Hartford Bumpers, and Hartford Auto-Jacks is attested by the fact that nearly every high-grade, upto-date American car is furnished with one or more of these Hartford-built accessories.

Truffault-Hartford Shock Absorbers are included as standard equipment on the output of twenty-five of the greatest automobile fac-tories in the world. They have brought easy riding and greater economy to over 200,000 motorists. The device is yet to be conceived which can satisfactorily take the place of the Truffault-Hartford. Four models including the New Automatic - be sure to see this latest Truffault-Hartford at the show.

Come and examine the Hartford Auto-Jack. It has three times the lifting efficiency of the ordinary jack—is better designed, better built and better finished without being over-priced. And Hartford Bumpers are designed to give thoroughly effective protection without marring the appearance of car or adding excessive weight. The method by which they are attached is a distinct improvement.

Hartford accessories are always interestingly exhibited and demonstrated. That is possibly the reason why the Hartford Suspension Company's Booth is always a centre of interest for show goers.

### HARTFORD SUSPENSION CO.

Office and Works: 142 Bay Street, Jersey City, N. J. LDWARD V. HARTFORD, Pres.

Manufacturers of Hartford Electric Lighting and Starting System

New York-1700 Broadway New York—1700 Broadway
New York—213-214 West 88th St,
Boston—319-325 Columbus Ave.
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## Some Plain Truths About Tires

THE Firestone Economy of Most Miles per Dollar is a direct result of the Firestone method of building—from design to final test.

The Firestone design prevents all abnormal strain—the quality and quantity of Firestone rubber will stand furious heat and terrific wear.

The wrapped tread construction, the two-cure process, the open steam vulcanizing—are all principles vital to Firestone supremacy—Firestone economy.

Economy of upkeep follows naturally the <u>resilience</u> of the Firestone rubber which, by absorbing little shocks and vibration, means long life to the car.

An inspection of the cross-sections of a Firestone Tire shows that greater tread-toughness and greater tread-thickness are more than Firestone claims—they are fundamental Firestone facts—the vital reasons back of Firestone Service—Most Miles per Dollar.

The Firestone Tire and Rubber Co., Akron, Ohio—All Large Cities "America's Largest Exclusive Tire and Rim Makers"

Pneumatic Tires, Truck Tires, Pleasure Electric Tires, Carriage Tires, Fire Apparatus Tires, Rims, Tire Accessories, etc.

Most Miles Per Dollar

> fittestone non skid tires

## America's One **Distinctive Motor Car**

The new "Six - 48" Keeton is the most dis-

Keeton is the most unstitutive Motor Car made in America. It ranks with the finest products of Europe in design, construction and finish. No detail has been overlooked that contributes to appearance, comfort, practicability, appearance, comfort, practicability, use and endurance.
Yet the Keeton is manufactured in

Yet the Keeton is manufactured in the economical American way and costs you about one-half the price of the imported car of its class.

It is the one American made car that stands forth from the general run—distinctive in its quiet elegance

of finish, harmony of line and wealth of detail.

A limited number of these splendid cars will be built for the coming season and it will be greatly to your advantage to communicate with us at



#### KEETON SPECIFICATIONS

Motor—Six cylinder, 4 in. bore, 5 in. stroke, cast en bloc, "L" head.

Ignition—Eisemann Dual High Tension Mag-neto, Automatic Spark Advance.

Electric Starting-Lighting — "Jesco" Starting and Lighting System, single unit type. Cooling—Centrifugal Pump and powerful fly-wheel insure ample cooling.

Front Axle—Elliott type, ball thrust bearing in yoke head.

Rear Axle—Full floating type, gear ratio 33/4 to 1. Imported annular bearings.

Brakes—Brakes cam actuated internal expanding, large diameter. Control-Left side drive, right hand control.

Steering-thrust wheel. -Worm and full Gear Type with bearings, 18 in. or 20 in. walnut

Clutch—Cone shaped steel disks running in oil and housed in fiv wheel.

Transmission—Selective type, 4 speeds forward and reverse, direct on third, imported annular bearings.

Wheels—Five interchangeable wire wheels, 34 in. in diameter, 4½ in. tires.

Speedometer-Warner Autometer with clock combination.

Horn-Klaxon.

Tire Pump-Mechanically operated, two-cylinder compressor.

Wheel Base-136 inches.

Equipment especially detailed and complete.

#### PRICES-F. O. B. DETROIT

- 2 Passenger Roadster, completely equipped .....
- 7 Passenger Touring Car, completely equipped .....

A full line of open and closed bodies.

#### More than a Cycle Car "CAR-NATION"

#### The Car for the American Public

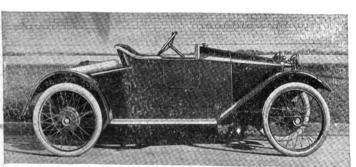
The "Car-Nation" is just what the The "Car-Nation" is just what the name implies—The Car for the American Public—having the appearance and mechanical "get up" of cars costing three times as much, yet the running and upkeep expense is reduced to a minimum 25-30 miles to the gallon of excelling. of gasoline.

Every part that enters into the construction of the "Car-Nation" is identically the same as has been used in some well-known car costing \$1,000

This means a long and economical life—as these parts are standard and will give exceptional service.

Then again the appearance of the car attracts attention—the V-shaped radiator, tapered hood and cowl, streamline body and wire wheels—all combine to make it a class proposition.

DEALERS — These snappy little cars are selling fast, and you will certainly miss a great opportunity if you do not get in touch with us about this thoroughly promised with the country of the control of thoroughly proven and tested Car-



\$495 2-Passenger "Car-Nation Roadster" \$495

#### CAR-NATION SPECIFICATIONS

Unit Power Plant—Motor—4 cyl. en bloc, 31/2 x 31/4, "L" head—large valves and bearings. Very quiet and powerful.

Ignition-Magneto-Fixed Spark.

Lubrication—Constant Level Splash—Plunger Pump.

Carbureter—Approved Type—very economical.

Cooling—Thermo-Syphon. V-shaped radiator,
adjustable belt-driven fan.

Clutch-Multiple steel disk type running in oil. Transmission—Selective type 3 speeds forward and reverse—One lever control.

Drive—Bevel gear through concentric Torque tube with one universal joint. Rear Axle-Semi-Floating Type, Hyatt Roller Bearings.

Brakes—Emergency, Internal Exp. on 10 in. drum on rear wheels. Service, external con-tracting on transmission shaft.

Wheels—Detachable wire—30 x 3 in. clincher rims and smooth tread tires. Control-L. H. drive, center control.

Wheel Base-104 inches. Tread-48 inches.

Standard Equipment—Horn—Head Lamps and Tail Lamp, with set of tools.

#### PRICES-F. O. B. DETROIT

Model A-2 passenger Roadster...... \$495.00 Model R—2 passenger Tandem Type... 510.00
Model C—4 passenger Touring Car... 520.00
Extra Equipment: Top \$25—Windshield \$10.00

Manufactured by The American Voiturette Co., Detroit, U. S. A. See Our Exhibits at New York and Chicago

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The Hit of the Shows-

## SHARRER ONE HAND TOP

Before the show it was generally conceded by the leading automobile engineers and top builders that the SHARRER TOP was the best in its class.

The fact that one well known Automobile Company exhibited a one man top on their best model on the first day of the New York Autò Show and changed the "one man top" to a SHARRER One Hand Top on the second day of the show is the best evidence of the superiority of the SHARRER TOP.

Modern equipment demands the SHAR-RER. Manufacturers should inquire into our proposition. The SHARRER is fully covered by patents and we guarantee to protect you.

Sharrer Patent Top Co., Inc. 245 West 55th St., New York City

Telephone, 6590 Columbus







Electric head, side tail and dash lights Storage battery 35 Horsepower motor 114-inch wheelbase 33 x 4 Q. D. tires

Three-quarter floating rear axle Deep upholstery Brewster green body,

SPECIFICATIONS:

nickel and aluminum trimmings Mohair top, curtains and boot Clear-vision windshield

EN years ago you had to pay \$600 for a two cylinder, eight horsepower Overland with a 72 inch wheelbase and a maximum speed of 30 miles—unequipped. Today \$950 buys a four cylinder Overland of 35 horsepower, 114 inch wheelbase and a maximum speed of from 40 to 50 miles an hour And the 1914 Overland comes completely equipped even to electric lights.

For catalogue please address Dept. 50.

## The Willys-Overland Company, Toledo, Ohio Manufacturers of the famous Overland Delivery Wagons, Garford and Willys-Utility Trucks. Full information on request.



Vol. XXXVIII

New York, U. S. A., Thursday, January 8, 1914

No. 3

## FORD AGAIN STAGGERS THE WORLD; FIXES \$5 AS MINIMUM DAILY WAGE

Reduces Working Hours and Creates Work for Thousands of Additional Men—Profit-Sharing on Prodigious Scale—\$10,000,000 to Be Distributed

This Year—Details of the Plan.

Accustomed to doing big things in a big way and without preliminary flourish of trumpets, Henry Ford and the Ford Motor Co., which, to all practical purposes, consists of Ford and James Couzens, by the institution of a profit-sharing plan have so far exceeded not only their own previous accomplishments but all other former achievements of the sort, as to astound the whole world and cause it to rub eyes for fear that eyes may be deceiving.

Of course, profit-sharing plans are not new; they are of many and diverse characters, most of them being of the sort that entails distribution of a small or comparatively modest proportion of the profits at the end of the business year, when they have been totaled. In the Ford case, however, the profits will be estimated at the beginning of the year and they will be distributed semi-monthly, not to any one particular class of wage earner but to every one of them.

Setting \$10.000,000 as the estimated profits for the year 1914, the Ford distribution means that every male wage earner—not the salaried man—over 22 years of age in the Ford employ, and wherever located, will receive not less than \$5 per day. It includes all, no matter how humble may be their positions.

Foremen, superintendents and other employes on salaries will continue to share in the usual distribution made at the end of every year, depending upon their records during the preceding 12 months. The amount of this distribution is decided by the officers and may or may not be increased.

#### KLAXON HORN PATENTS SUSTAINED; NEWTONE LOSES HARD-FOUGHT SUIT

Lovell-McConnell's Patents Declared Valid and Court Even Extends Them to Cover Hand-Operated Horns—Decision Sweeping, Almost Recognizing Patent on Klaxon's Noise.

At present the minimum wage in effect at the Ford establishment is \$2.34. Men who are receiving \$5 per day, or over, will share correspondingly in the increase. For instance, the \$5 man will hereafter receive \$7.66 per day, or an increase of \$2.66.

(Continued on page 63.)

#### BALL BEARING MAKERS PLAN A POPULARIZATION CAMPAIGN.

Of the many small meetings held this week, during the New York show, few, if any, may prove of greater ultimate import than the conference of the American ball bearing makers and importers, who "got together" with a view of undertaking a campaign for the popularization of ball bearings as against the roller type. The conference, which was held in the McAlpin Hotel, was attended by representatives of most of the best known concerns in the industry, and, although nothing definite transpired, the idea in mind was to raise a publicity fund, for the furthering of the end in view.

#### DE DION-BOUTON DROPS "FOURS" IN FAVOR OF "EIGHTS."

While Americans are arrayed for or against four- or six-cylinder cars, or are astride the fence, the De Dion-Bouton Selling Branch, of New York, of which Emanuel Lascaris is the head, has "plumped" strong for eight cylinders. In other words, Lascaris will no longer import four-cylinder De Dion-Bouton cars, except on special order; instead, he will carry in stock only the eight-cylinder V-shaped model, which is made in models up to 100 horsepower.

After having had the hard fought case under consideration for seven months, Judge Chatfield, in the United States District Court for the Eastern District of New York, late Tuesday afternoon last, 6th inst., decided that the Newtone horn is an infringement of the Klaxon patents. In fact, he not only upheld all the claims of the Klaxon patents but, although it was generally understood that they applied most specifically to motor actuated horns, particularly of the right angle type, Judge Chatfield gave a new and unexpected turn to the situation by declaring that they also cover the hand horns actuated by a crank instead of an electric motor and which acquired such sudden popularity during recent months.

In even more specific language he remarks that he finds no reason why the patents do not apply not only to the Newtone "or commercially useful and valuable forms of this kind of signaling apparatus," going so far as to indicate that, although noise of itself is not patentable, he would have sustained a "method claim" for the noise had it been included in the patents.

The parties to the litigation were, of course, the Lovell-McConnell Mfg. Co., of Newark, N. J., and the Automobile Supply Mfg. Co., of Brooklyn, N. Y., the patents involved being Nos. 923,048, 923,049 and 923,122. issued May 25, 1909, to Miller Reese Hutchison, by whom they were assigned to the Lovell-McConnell people.

During recent years, no patent litigation has been more bitterly contested. The feeling existing has been so strong that Judge Chatfield remarks it in his decision.

While the case just decided was the main issue, the Lovell-McConnell company, through its counsel, George Cooper Dean, has waged vigorous warfare in all directions. In addition to the suit against the Newtone makers themselves, actions for infringements were instituted in many jurisdictions against a large number of jobbers and supply dealers who handle Newtone horns and also against several automobile manufacturers and automobile dealers who sold cars to which Newtone and other horns, particularly the Sparton, were attached; for separate suits involving the same patents are now pending against the manufacturers of the Sparton, the Sparks-Withington Co., of Jackson, Mich., and the Square Horn Mfg. Co., of New York.

Judge Chatfield's decision establishes a record for length, and perhaps for verbosity. Printed in full in Motor World, it would occupy some 12 pages. It discusses, in more or less detail, most of the alleged anticipations cited by the defendants and the main points raised by counsel for both sides, the anticipation including practically every noise-making device from fog horns to campaign rattles. Notwithstanding this verbosity, the court in concluding his decision takes cognizance of the "possibility of causing further litigation by attempting to separate and comment upon the individual claims that have been called into question or to specify what structures might escape infringement."

Having said this, he holds "upon the issues raised the Hutchison patents and the claims relating thereto, both as to devices and as to the method of operation, seem to be valid. The defendant's devices are infringements and the complainant may have a decree."

Hadge Chatfield commented upon the fact that the Newtone horn resembles the Klaxon in appearance and paused to consider the element of unfair competition; were the devices alike in construction and design he said there would be no unfair competition, but when the copy of the patented article was sold for a lower price he stated that the element of unfair competition entered.

"In the course of business." he stated, "the defendants procured from a manufacturer who sold to the market generally, a number of electric motors, which had been manufactured to meet the supposed future wants of the complainant, and while the defendants thereby did not infringe any specific claim of the patent, nevertheless they have by the use of those motors and similar motors of the same sort, increased the physical resemblance and the structural similarity of their signals to those of the complainant, and thus simplified the question of infringement.

"Certain forms of the devices are made for operation by hand, that is, by turning of a crank instead of by the use of an electric motor, and as will be seen when the specifications and claims are dis-

(Continued on page 64.)

## RUSSELL ENDS DECADE OF SERVICE WITH LOCOMOBILE

Factory Manager Who Really Resigned Last Fall, Takes Formal Leave—Connected With Industry for Many Years.

After having served for 11 years as factory manager of the Locomobile Co. of America, of Bridgeport, Conn., E. F. Russell, one of the best known engineers in the trade, has resigned that post. In fact, he resigned it last fall, when he went to the Pacific Coast for a three months' visit, from which he has just returned. His formal leavetaking, however, did not occur until this week, and knowledge of it cannot fail to create widespread surprise.

His parting from the Locomobile principals was of an amicable nature; in fact, he still retains his stockholdings in the company. He has at least one flattering offer under consideration, but his future plans are not yet settled.

Russell joined the Locomobile staff in 1902, having previously served one year with the General Vehicle Co. and three years with the Pope Mfg. Co., of Hartford. He had much to do with the production of the latter company's early cars. Before taking up automobiles he was for many years identified with the Overman Wheel Co., producers of the once famous Victor bicycle, and had also served as a tool maker and designer of special automatic machinery.

Few engineers in the industry are considered better versed or more competent, and as a factory manager Russell's reputation is well established.

#### Keeton is Absorbed by Car-Nation.

As a short way out of troubles that beset it, the Keeton Motor Co., of Detroit, which manufactured a few cars of that name, has been practically absorbed by the American Voiturette Co., also of Detroit, which is controlled by the same men, chief of whom is Charles B. Shaffer. While the Keeton car will be made and sold on at least a limited scale by the Voiturette company, the latter's chief production will be the Car-Nation cyclecar, which has been in process of development for several months and the first of which made its appearance at the New York show this week. Shaffer, a minority stockholder in the Keeton company, discovered early last year that it was heavily involved and it was he who advanced funds to keep it going up to the present time. Shaffer is president of the American Voiturette Co., of which H. H. Newsom is vice-president and general manager, C. E. Lewis secretary and treasurer and C. T. James assistant secretary and treasurer.

De Lisser Once More Rejoins Briscoe.

Benjamin Briscoe and Horace De Lisser are together once more, De Lisser having been elected vice-president and general manager of the Briscoe Motor Co. of New York, of which Briscoe is president. Both men have been so long and so closely associated, first in the Ajax-Grieb Rubber Co. and later in the United States Motor Co., that the present move is in no wise strange. While De Lisser will have an office in the Briscoe company's headquarters in New York City, he will remain chairman of the Ajax-Grieb board and continue to be active as heretofore in its affairs. The manufacture of the Briscoe \$750 car will, as stated in last week's Motor World, be carried on by the Lewis Spring & Axle interests in Jackson, Mich.

Singer Restored to P-S Presidency.

Charles A. Singer, Sr., for many years president of the Palmer & Singer Mfg. Co. of Long Island City, N. Y., who, late in August last, exchanged places with Clyde B. Knapp, first vice-president, has been reelected to the presidency, Knapp, of course, retiring. To mark the occasion, the officers and employes of the company presented Mr. Singer with a gold inlaid silver cigar case appropriately inscribed.

At the time that Knapp was elected president last August, it was stated that he represented certain Standard Oil interests which controlled the Motor & Gear Improvement Co., which, in turn, controls the rights to the Magic motor in this country. Knapp also was president of the Aristos Co., of New York, which failed last month.

Receiver to Sell Amplex Property.

The property of the Amplex Motor Car Co., which built the big car of that name in Mishawaka, Ind., is being offered at private sale by the receiver, M. W. Mix. Unless it is so disposed of before January 20th, it will be put on the block and sold at auction. The property includes a completely equipped plant—the machinery and tools being valued at \$75,000—in addition to parts sufficient to build 15 Amplex cars, the merchandise and stock being inventoried at \$123,750.

To Sell Interstate Plant February 5. February 5th has been fixed as the date

for the receiver's sale of the assets of the Inter-State Automobile Co., of Muncie, Ind. which failed October 17th last. It is intimated that some of the men interested in the bankrupt company will likely bid in the property.

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#### MOTOR WORLD

#### **ENTZ ELIMINATES CLUTCHES GEARSETS AND STARTERS**

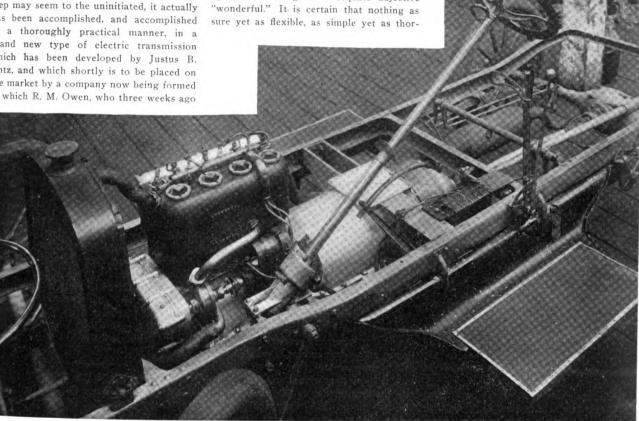
R. M. Owen Takes Up Cleveland Man's Radical Electric Transmission-Company Now Forming -One Lever for 7 Speeds.

To do away at one fell swoop with the flywheel, and clutch, and gearset and their levers and pedals and also the engine starter, surely smacks of radical and revolutionary practice; but as impossible as this step may seem to the uninitiated, it actually has been accomplished, and accomplished in a thoroughly practical manner, in a brand new type of electric transmission which has been developed by Justus B. Entz, and which shortly is to be placed on the market by a company now being formed of which R. M. Owen, who three weeks ago

Following an incubation period which reaches back as far as the year 1900, the Entz electric transmission had its first public demonstration at the New York automobile show in Grand Central Palace, where it now is now is exhibited both on Owen's private car-an Austrian Daimler-and on a stripped chassis constructed especially to hold it. Prior to the opening of the show. however, it was privately demonstrated to a Motor World man, and its perfect operation, the ease with which the car was controlled, the smoothness of the drive and the gentle acceleration are best described by the not altogether adequate adjective "wonderful." It is certain that nothing as

tion by mechanical means between the engine and the propeller shaft. Consequently, there can be no starting with a jerk, nor can engine impulses be transmitted. Incidentally, speed changes are made absolutely imperceptibly; the mechanism provides for continuous torque.

In its simplest aspect, the Entz transmission consists of but four essential elements, of which one is a standard 18-volt storage



APPLICATION OF THE ENTZ ELECTRIC TRANSMISSION WHICH ELIMINATES FLYWHEEL, CLUTCH, GEARSET AND STARTER

controlled the distribution of Reo cars, is to be head.

In all probability it will be styled Entz Motor Car Co., for in addition to producing the Entz transmission, it is planned to build about 100 cars during the year, in which it is to be incorporated; later, manufacturers will be licensed to produce the transmission. Associated with Owen in the new company are Roy Rainney, J. B. Entz, Walter Baker, of the Baker Electric Co., and Ralph Owen. The Entz cars will be fitted with a six-cylinder motor with a bore and stroke of 31/2 and 51/4 inches, respectively, and it is expected that the first one will be ready for the market about March

oughly automatic, has so far appeared, and it is difficult to conceive of a mechanism of any other type capable of performing so many functions and of performing them so well.

For the usual gear-shifting lever, the Entz transmission substitutes a tiny hand lever which may be mounted atop the steering column either above the steering wheel or below it. The movement of this one lever serves to give no fewer than seven different speed ratios between the engine and the road wheels and at the same time acts also as the switch for starting the engine; there are no gears or other mechanical parts in the transmission; there is but one moving part; and there is never a positive connec-

battery such as ordinarily is used for the Entz electric lighting and engine starting system, which is a product of the same inventor's genius; the other three are the control switch, a motor generator and a motor. The principle upon which the whole apparatus operates can best be explained by likening it to the principle that moves the indicating hand on a magnetic speedometer. It is simply magnetic drag, in other words, though it has required no end of experimenting to bring the apparatus to its present perfected form. And that it is perfect is indicated by the fact that during the past year a car equipped with the transmission has been driven a total of more than 16.000 miles over roads good, bad and indif-

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ferent in sunshine and in storm without a falter.

In practice it is quite possible to eliminate the storage battery for the transmission does not rely upon it in the slightest degree for operation. The battery serves no purpose it does not serve with an ordinary electric lighting and engine starting system. It represents a source of energy for starting the motor and for carrying the lamp load when the engine is idle.

The components of the apparatus, as already have been explained, include a generator and a motor, and these two units are approximately the same size; they both are completely enclosed in aluminum housings, as is shown by the accompanying illustration and therefore are thoroughly protected from accidental injury. And as there is only one moving part which cannot possibly get out of order for the good and sufficient reason that there is absolutely nothing to get out of order, it is perfectly reasonable to expect that the apparatus will operate almost indefinitely without the slightest trouble.

Of the two principal units of the transmission, the field portion of the generator takes the place of the usual engine flywheel, which is eliminated. The armature of the generator is keyed fast to the propeller shaft and is free to rotate within the field. The other unit, which is a series wound motor, also has its armature keyed fast to the propeller shaft, but the field is held stationary through anchorages to the chassis frame.

In describing the operation of the system, it is perhaps best, in order to make it easily understandable, to commence at the back, to so speak, and to work forward—to assume, in other words, that the engine has been started and that the car is ready to commence its movement.

Immediately the field of the generator, which represents the flywheel of the engine, commences to rotate-it being assumed, of course, that the hand lever has been placed in the first speed position-it exerts a drag on the armature which is keyed to the propeller shaft and tends to turn it. So long as the speed of the engine is extremely low the drag will not be sufficient to turn the armature and with it the propeller shaft, and so to move the car. But when the throttle is opened and the engine speeds up, the drag increases until the armature commences to turn and thus to move the car. Thereafter, what is technically termed the slippage between the rotating field and the armature will remain practically constant, the ratio being determined by the connections as established by the hand lever. As the engine is slowed, to within a predetermined limit, or its speed is increased, the speed of the armature will de-

crease or increase in the same proportion, exactly as the propeller shaft speed will increase in an ordinary gear-driven car when the engine is speeded up or slowed.

The function of the hand lever is merely to establish the connections that determine the ratio of slippage between the field and the armature. This ratio is altered by the simple expedient of strengthening or weakening the field. When the field is strong the slippage is at its minimum, and as the strength of the field is decreased the slippage increases. Obviously, the simplest method of weakening or strengthening the field is by inserting or removing resistance, but such a method would represent a considerable loss of efficiency, for no small amount of current that might be put to a useful purpose would merely disappear in the form of heat.

It is here that the second unit-the series wound motor that has its armature keyed to the propeller shaft-establishes its importance in the make-up of the system. For, instead of using ordinary wire resistance to weaken the strength of the generator field, Entz uses part of the field of the motor, which thus is energized and exerts a certain amount of pull on the propeller shaft. Thus. at low speeds, the energy that ordinarily would be lost is turned to useful work through the motor, which assists in propelling the car. As the ratio of slippage between the generator field and its armature is decreased to increase the speed of the car, the motor on the propeller shaft gradually is cut out of operation until at what corresponds to high gear it becomes inopera-

The operation of starting the motor is so simple that it scarcely requires an explanation at all. When current is passed to the field of the generator, from the storage battery, it becomes energized and tends to rotate the armature, as is the case with any ordinary motor. Ordinarily, the propeller shaft would turn and, of course, would propel the car backwards. But if the hand brake first is set, locking the propeller shaft, the field then rotates about the armature and starts the motor.

Obviously, all, or nearly all, of the functions that cause the car to move forward can be reversed when the car is coasting down hill, whether the engine is "dead" or "alive." Thus the armature would tend to overrun the field, but the drag is sufficient to prevent such actiton, with the result that the generator becomes a very efficient brake in which there is absolutely nothing to wear and which will hold the car speed down to approximately 10 miles an hour, regardless of the steepness of the grade, provided only that wheel traction is obtainable.

Inasmuch as the Entz electric transmis-

sion replaces flywheel, clutch, gearset and engine starter, to say nothing of the usual dynamo—the battery automatically is kept charged, by the way—its substitution for these hitherto necessary parts cannot be expected to increase the normal weight of car. In size, the apparatus is comparatively small, as is made plain by the accompanying picture, and though it can be installed in almost any car, the preferred method is to build it properly in place at the factory.

#### Ajax Denies Rubber Dealer's Charge.

Denying that the charges made by the trustees in bankruptcy of the New York Commercial Co., a crude rubber dealer, are correct, the Ajax-Grieb Rubber Co., of New York City, declares that its first knowledge of the claims made was obtained when the trustees filed their recent suit in the Supreme Court for New York county. The receivers ask \$1,968.75 on the grounds that the Ajax company failed to take 10,643 pounds of rubber for which it had contracted.

The defendant denies that "the New York Commercial Co., bankrupt, or its receivers or trustees at any time during March, April or May, 1913, or at any time thereafter up to the present day, ever offered to deliver or even suggested delivery of the 10,643 pounds. On the contrary, on account of their having gone into the hands of the Bankruptcy court, they were unable to make the delivery . . . that at no time was this rubber offered to the Ajax-Grieb Rubber Co. or any compromise effected, and we assume that the reason why we did not receive the rubber was because the New York Commercial Co. had become bankrupt."

#### Plummer Heads the Colby Merger.

The Standard Motor Co., which absorbed the Colby Motor Co., of Mason City. Ia., and the Nevada Mfg. Co., of Nevada, in the same State, has perfected its organization by the election of the following officers, all of them Iowans: President, R. C. Plummer, vice-president of the First National Bank at Forest City; vice-president, George H. Fuller, president of the Farmers' State Bank at Rockwell; treasurer, Isaac Sweigard, president of the Farmers' National Bank of Garner; secretary, W. T. S. Rath, vicepresident of the State Exchange Bank of Ackley; assistant secretary and treasurer, S. A. Schneider, secretary and treasurer of the Mason City Loan and Trust Co.; gen eral counsel, John A. Senniff, president of the Security National Bank, of Mason City. The Standard company, as stated in last week's Motor World, will continue the manufacture of Colby cars and tractors in Mason City.



Punxsutawney, Pa.—McQuown Auto Co., under Pennsylvania laws; authorized capital \$5,000.

Brillnis, Mont.—Baker Automobile & Machine Co., under Montana laws; authorized capital, \$2,000.

Greenville, S. C.—Victor Motor Car Co., under South Carolina laws; authorized capital, \$100,000; to manufacture motor cars.

Rahway, N. J.—National Body Co., under New Jersey laws; authorized capital, \$10,000; to build automobile and wagon bodies.

Wichita, Kan.—Chirocar & Cycle Co., under Kansas laws; authorized capital, \$100,000; to manufacture and sell vehicles of light construction.

Indianapolis, Ind.—Ideal Accessory & Repair Co., under Indiana laws; authorized capital, \$10,000. Corporators—Arthur Wolf, W. F. Clemens and P. E. Powell.

Milwaukee, Wis.—Wollaeger Sales Co., under Wisconsin laws; authorized capital, \$30,000. Corporators—John G. Wollaeger. Arthur A. Muller and Margaret Mollerus.

Oklahoma City, Okla.—Enid Ford Co., under Oklahoma laws; authorized capital, \$5.000. Corporators—C. C. Burchfield, Enid; L. Bertwell. Meno; J. A. Ratcliff, Wichita, Kan.

Boston, Mass.—Smith Tire Valve Co., under Massachusetts laws; authorized capital, \$10,000. Corporators—James H. Smith, Reginald L. Robbins and E. Dwight Fullerton.

Indianapolis, Ind.—Wizard Motor Co., under Indiana laws; authorized capital. \$50,000; to manufacture motor cars. Corporators—Edward H. Habig, O. C. Forbes and P. S. Flores.

Lynn, Mass.—Broadway Garage, under Massachusetts laws; authorized capital, \$1,000. Corporators.—Julian L. Swan, John C. Welsh, George E. Crosby, Sarah E. Swan and William O. Swan.

Amsterdam, N. Y.—Merriman Motor Car Co., under New York laws; authorized capital, \$15,000. Corporators—Walter J. Merriman, John Bartholomew and Harry S. Benjamin, all of Amsterdam.

Chicago, Ill.—Lewis Differential Co., under Illinois laws; authorized capital, \$25,000; to engage in general manufacturing. Cor-

porators—Frank M. Lewis, 2030 West Harrison street; F. S. Lewis and Roy Lewis.

Goldsboro, N. C.—Ford Garage Co., under North Carolina laws; authorized capital, \$20,000; to operate a garage, rent and repair motor cars. Corporators—H. B. Parker and others.

Cincinnati, O.—Mutual Auto Supply Co., under Ohio laws; authorized capital, \$10,000; to deal in motor cars and accessories. Corporators—E. F. Strong, M. J. Roan, W. R. Ryan, Jr., J. W. Wildis and E. P. Smith.

New York, N. Y.—McGraw Tire & Rubber Co., under New York laws; authorized capital, \$1,000. Corporators—Russell F. Hoborn, 1664 Broadway; William L. Levy and Maxwell Davidson, both of 170 Broadway.

Syracuse, N. Y.—Olmstead Co., under New York laws; authorized capital, \$150,-000; to deal in saddlery, hardware, furs and automobile tires. Corporators—A. M. and W. H. Olmstead and Mayer Wetherill, all of Syracuse.

New York, N. Y.—Delehanty Tire Corporation, under New York laws; authorized capital, \$125,000. Corporators—W. E. Delehanty, 139 West 144th street; N. M. Cooke, 17 East 48th street; J. V. Reddy, 421 Seventh avenue.

Richmond Borough, N. Y.—Columbian Auto & Motor Car Co., under New York laws; authorized capital, \$5,000. Corporators—James A. Wisely and Francis F. Leman, both of West New Brighton; Earl T. Shortt, Port Richmond.

Chicago, Ill.—Bullock Tractor Co., under Illinois laws; authorized capital, \$100,000; to manufacture tractor engines and other machinery. Corporators—Henry E. Bullock, 541 Deming Place; James E. Bullock and William O. Wayman.

New York, N. Y.—Ajax Auto Service Co., under New York laws; authorized capital, \$5,000. Corporators—Arthur G. Mc-Keever, 521 West 149th street; John J. Bradley, 645 West End avenue; James P. Shinnisk, 544 51st street, Brooklyn.

Brooklyn, N. Y.—Oakland Garage Corporation, under New York laws; authorized capital, \$1,000. Corporators—Herman C. Schaeffer and Estelle M. Schaeffer, both of 128½ Noble street; Christopher Schaeffer, South 19th street, Flushing, N. Y.

New York, N. Y.—Bergman Bros., under

New York laws; authorized capital, \$2,000; to deal in motor car accessories. Corporators—Harry Weinstein, 620 East 170th street; Manuel Bergman and Theodore Bergman, both of 19 West 115th street.

Poughkeepsie, N. Y.—Horace Sague & Son, under New York laws; authorized capital, \$35,000; to conduct a general motor vehicle business and operate a garage. Corporators—Horace Sague, James E. Sague and John K. Sague, all of Poughkeepsie.

Topeka, Kan.—Kansas Motor Car Co., under Kansas laws; authorized capital, \$10,000; to conduct a general motor vehicle business. Corporators—R. K. Wilson, J. T. Kingman. Los Angeles, Cal.; C. J. Botkin and L. E. Montgomery, both of Topeka.

#### Minor Business Troubles.

The Lynchburg (Va.) Motor Car Co., Inc., has assigned to B. E. Hughes as trustee; the liabilities are about \$35,000. Most of the creditors are located in Lynchburg.

The Oshkosh (Wis.) Motor Car Co. has filed a petition in bankruptcy; its assets are \$14.082.11 and its liabilities \$33,821,80, of which \$31,834.62 is unsecured. The principal claims are: Cadillac Motor Co., of Detroit, \$2,022.28; Michelin Tire Co., Milltown, N. J., \$792.31; Republic Rubber Co., Chicago, \$948.51; Dayton Engineering Laboratories Co., Dayton, \$119.39. The company operated a garage and salesrooms in Oshkosh for several years. The heaviest creditors are President J. A. Crum and his wife.

A receiver has been appointed for the People's Automobile Co., of Norwalk, O., upon the application of John K. Seigle, a creditor; the company, of which Harry K. Ingler is the principal, operates a garage and salesrooms.

#### Changes in Capitalization.

Indianapolis, Ind.—Motor Car Mfg. Co., from \$150,000 to \$250.000.

Hartford, Conn.—Hartford Rubber Works Co.. from \$1,000,000 to \$2,000.000.

· Canton, O.—Timken Detroit Axle Co., from \$1,000,000 to \$942,500.

Indianapolis, Ind.—G & J Tire Co.. from \$1,000,000 to \$2,000,000.

Detroit, Mich.—Long Mfg. Co., from \$300,000 to \$400,000.

Toledo, O.—Auto Lite Co., from \$100,000 to \$225.000.

#### SPARK PLUG MAKERS RALLY AROUND CANFIELD PATENT

Mosler's Licensees Plan Organization for "Betterment of Industry"-Idea Hatched at Dinner by . Mosler to His Licensees.

As the Selden patent was the lodestone about which the automobile manufacturing trade once centered, so the Canfield spark plug patent bids fair to draw a good portion of that branch of the accessory trade into an organization; the preliminary steps were taken Monday afternoon in New York City, where A. R. Mosler, who owns the patent, gave a luncheon in the Hotel Astor to those manufacturers who have taken out licenses following the courts' decree that his patent

Price-fixing is, of course, forbidden, so that is not one of the objects which the promoters claim for the organization, and the one big object which seems to be paramount is the betterment of trade conditions; as now contemplated only Canfield licensees will be admitted, but the patent is so comprehensive that it is unlikely that any maker can operate without becoming a licensee.

Mosler's luncheon was popular with the men who have been compelled to bow to his patent, and that the dove of peace was not far away is indicated by the fact that one of the guests was D. B. Mills, of the Rajah Auto Supply Co., who fought the suit bitterly. After William A. Redding, Mosler's attorney, had told the licensees of the good that an association with occasional "get together" would do, a committee was named to investigate and report to the spark plug makers at another meeting to be held at the Astor tomorrow afternoon, 9th inst., at 2 o'clock. The members are: D. B. Mills, Rajah Auto Supply Co.; Albert Champion, Champion Ignition Co.; R. A. Strohnnehan, Champion Spark Plug Co.; David Smith, Standard Co., and Otto Heins, Bosch Magneto Co. It is likely that the name will have been selected and other details arranged by Friday's meeting.

Instead of Mosler being a grinding taskmaker with his patent-which is a powerful club did he care to use it so-his fairness in granting licenses has caused favorable

"I'm glad he won out," said one of the luncheon guests. "If he hadn't won, we would not, for one thing, have got this free feed; for another thing, I wouldn't have met a lot of my competitors and found out that they are almost human and not half so black as they are painted. It's a good thing all around."

Aside from the committee, the luncheon

guests included: H. H. Montague, Western Electric Co.; Messrs. Ganger and Gray, Hartford Machine Screw Co.; Emil Grossman, Emil Grossman Co.; George Wright, New York Mica Mfg. Co.; S. M. Kitchen, Auburn Ignition Co.; Mr. Ash, Lockwood-Ash Motor Co.; Mr. Sullivan, L. M. Benton Co.; Mr. Fisher, Silvex Co., and Mr. Maybee, Jeffery-Dewitt Co.

#### Bankrupt Dealer and Maker Sue.

One bankrupt trying to get money out of another bankrupt is interesting, if not unusual; the result, also, should prove fully as much a point of interest.

Such a situation arose this week in the United States District Court for the Southern District of New York when Frederick W. Van Blarcom, trustee in bankruptcy for William J. Tynan, a dealer in Paterson, N. J., filed a suit for \$2,500 against W. E. S. Strong and Roberts Walker, receivers for the United States Motor Co. Just before Tynan went into bankruptcy he paid \$2,500 to the United States Motor receivers and the bankruptcy court in New Jersey has ruled that payment was preferential. This left nothing for the Tynan's trustee to do except to try to get the money back.

The United States Motor receivers, as is well known, sold the assets of the company to the Maxwell Motor Co. and have nothing in particular in their possession, so Tynan's trustee may afford the court a knotty problem.

#### Mezger and Grossman Quit Litigation.

Following the taking over by the H. W. Johns-Manville Co. of the marketing of Mezger Soot-Proof spark plugs, the patent infringement suit which was instituted nearly a year ago by C. A. Mezger, Inc., of Mt. Vernon, N. Y., against the Emil Grossman Co., of New York City, in the United States District Court for the Southern District of New York was discontinued this week without costs; the change of interests is said to have been accompanied by a change of feeling which led to the discontinuance.

The Mezger company charged that Grossman's Red Head spark plugs infringed patent No. 700,147, granted May 13, 1902, to Minnie Mezger; the plug was invented by C. A. Mezger and its claims covered a plug generally.

#### More Capital for the Long Radiator.

"Its assets warranting the increase, and thereby permitting the assumption of several large contracts," to quote the official statement, the Long Mfg. Co., of Detroit, has increased its capital stock from \$300,-000 to \$400,000. The company manufactures several types of radiators and reports having in hand orders far in excess of any previous year.

#### MARVIN EXPLAINS HOW TO MAKE FREIGHT RATES LESS

Shows Dealers and Manufacturers How Proper Classification of Goods May Permit Use of Lesser Rate.

Undoubtedly aware of the fact, many automobile dealers, and at least a few manufacturers, have been contributing to the railway exchequers more than they should contribute, due to lack of knowledge concerning the proper classification of goods. That the practice is so general as to require correction is due to the discoveries of J. S. Marvin, general traffic manager of the National Automobile Chamber of Commerce.

In auditing the freight bills sent to him. he found that many shipments listed as "automobile parts" or "motor parts," which bear the first class rate applied to finished vehicle stock or stuff not otherwise specifically rated, consisted of articles entitled to the second class rate, which they would have borne had they been properly described in the bills of lading. As it was the shippers paid an unnecessarily high rate of shipment.

This second class rate applies "to automobile engine or motor parts, not otherwise specified, iron, steel, babbit metal, brass, bronze or copper, in barrels, boxes or crates, less carloads."

Marvin points out that shipments made up of such articles should not be described as "automobile parts" or "motor parts." Similarly, many shippers describe shipments of automobile engines as "motors," which is the railways' classification for electric motors and which pay the first class figures, whereas automobile engines are second class rate and should, therefore, be billed as "automobile engines" or "gasolene engines."

The same erroneous and costly description of springs prevailed, to which various rates applied. When described merely as "springs," the highest rate is charged, but when described in bills of lading as "elliptic springs" the railroads charge for them at 20 per cent. less than third class-a very substantial difference.

Newerf's Tire Making Plans Take Shape.

The Panama Rubber Co., which was of ganized several months ago by W. D. Newerf, the well-known Los Angeles tire jobber, has finally placed contracts for the erection of its plant. It will be a one-story brick and concrete structure, containing 28,000 square feet of floor space, and when completed and equipped will represent a cost of approximately \$125,000.



A. J. Lindsay, president of the Lindsay Motor Car Co., of St. Louis, having disposed of his interest to William Schreiber, and R. E. Frye, formerly secretary and treasurer, having been made president, the name has been changed to Frye Motor Car Co. Schreiber is secretary and sales manager. The concern will retain the former location at 3327 Locust street and will continue the same agencies—Paige-Detroit, Premier and Fiat. Schreiber has been a Premier salesman for several years with the exception of a few recent months, when he sold Kissel cars.

The Anderson Automobile Co., Inc., of Anderson, Ind., has been purchased by Alva N. Harold; he will continue the garage and service under the same name as heretofore. The agencies for Cole, Overland and Detroit electrics have been turned over to Jesse L. Vermillion and Earl E. Young, who will continue this business under the style Automobile Sales Co. Ralph H. Smith, former president of the Anderson Automobile Co., has become a salesman for Vermillion & Young.

The Bacon-Wain Motor Sales Co., which recently was formed to handle King cars in Lucas county, Ohio, has opened salesrooms in Toledo in the quarters of the Maumee Motor Car Co., 1017 Jefferson avenue; the Maumee company is State distributer. Besides the salesrooms, the Bacon-Wain company will maintain a service and repair plant at 840 Dorr street. The members of the company are Charles Wain and C. F. and A. E. Bacon.

The E. L. Peacock Auto Co., of Oakland. Cal., of which Fred Hauger was recently made manager, has removed to the new dealers' colony on upper Broadway; it has located at 2841 Broadway, where it has newly finished salesrooms and a service and repair department. The company handles Mitchell, Oakland, S. G. V. and Empire cars and Sternberg and Selden trucks.

A. B. Capron, formerly manager of the Bay Shore (N. Y.) Auto Co., has formed the Capron Co. and has taken over the Bay Shore company's business; he will make extensive alterations in the building and will carry supplies, accessories and Maxwell cars. The new company has adopted as its motto, "Be Square with Everyone Every Time."

The Michigan Avenue Garage, which is located on Michigan avenue, near Taylor street, in South Bend, Ind., is one of the first to link itself with the Lincoln Highway, of which the street on which it is located is to be a part; the garage has changed its name to Lincoln Highway Garage.

George P. Jenkins, of 312 Amsterdam avenue, who for many years has been engaged in the motorcycle business in New York City, is preparing to embark in the automobile trade; he has secured the agency for the Vulcan car and is organizing the Eastern Auto Sales Co. to handle it.

The Edison Co., of Boston, has erected an electric garage at 1165 Massachusetts avenue to care for the 145 cars it operates; Charles F. Smith is manager. A despatching system has been installed whereby a driver can be made ready and the car sent out of the garage in 24 seconds.

The Wichita Automobile Co. and the Wichita Garage Co., in Wichita, Kan., have been merged; the consolidated interests will abandon the Wichita Automobile Co.'s location on Lawrence avenue and conduct the business in the garage's location at 233 North Lawrence avenue.

Henry Fleckenstein, formerly employed by the Michigan Buggy Co., has set up for himself in Kalamazoo at 1119 Race street; he has several other former Michigan employes associated with him and will conduct a storage garage and refinishing establishment.

John Schmelz, who, among other things, is postmaster in New Ulm, Minn., has purchased the garage of W. J. Paffrath, in Springfield, in the same State; besides the Overland agency, the business will include accessories, supplies and an automobile livery.

George W. Baker, of Washington C. H., O., is about to organize the Baker Auto Transit Co., with a capitalization of \$10,000; he is the owner of the Springfield & Washington Railway and a motor 'bus line between Jeffersonville and South Charleston.

C. F. Rockwell, formerly connected with the Jeffery branch in Boston, has taken over the New England business of the company under the style C. F. Rockwell, Inc. He has been associated with the Thomas B. Jeffery Co. for a number of years. The Motor Storage Co. has been formed in St. Louis, Mo., to maintain a downtown garage for the storage of cars during business hours; its plans include a 12-story concrete garage, with four electric elevators, at 12th and Locust streets.

W. L. Rubeck, C. E. Hill, John L. Hill, C. J. Benefield and Omer Nelson have formed a company and will operate a garage in Reelsville, Ind. They will erect a new building for their business on the National road.

Bradley J. Saunders, formerly interested in the East Lake Land Co. in Birmingham, Ala., has formed the Saunders Motor Car Co. He will handle Hudson cars at 422 South 20th street.

David Grant, of Philadelphia, has been granted permission to erect a one-story, brick garage and repair-shop, 119 x 137 feet; it will stand on 33rd street, near Oxford street.

E. T. Radcliffe, until recently a student in Lombard College, Galesburg, Ill., has opened salesrooms in that town, at 181 North Cherry street; he has the Studebaker line.

T. V. Graves, formerly manager of the Goodyear Rubber business in Omaha, has entered the trade for himself at 2102 Farnam street; he will handle American tires.

E. W. Johnson and F. L. Johnson, of Chicago, have secured permission to erect a one-story garage, 50 x 120 feet; it will

I. C. Lessenich, of Sioux City, Ia., has sold the Pioneer Automobile Co. to S. C. Brown, of Bronson, in the same State; the latter will operate the company.

stand at 7526 Cottage Grove avenue.

Herbert Hermans, of Paterson, N. J., has sold his interest in the Center Garage Co. to Charles Feigles and Emil Malbi; the latter will continue the business.

The Boulevard Garage in Santa Rosa, Cal., has been taken over by H. N. Le Baron, of Valley Ford, in the same State; it is located on Main street.

The Hansel-Ortman-Modesto Co. has been formed in Modesto, Cal. It will distribute Overlands in San Joaquin county. H. Gernsner is manager.

A. J. Baerle and J. H. McCarthy have opened salesrooms in Erie, Pa. They have the Partin-Palmer agency for Erie and Crawford counties.

#### BATTLE BEGINS FOR RIGHT TO WIRE WHEEL PATENTS

Rudge-Whitworth and Standard Roller
Bearing Interests Seek to Enjoin
Houk—Peculiar State of Affairs is Created.

Prophecies that sooner or later there would be a clash over wire wheel patents have proved true, but the clash that has happened is not between those whom the prophets named. Instead, the warring parties are Rudge-Whitworth, Ltd., of England, and the receivers of the Standard Roller Bearing Co., of Philadelphia, on one side; and the Houk Mfg. Co., of Buffalo, on the other, the latter being the defendants in the action which has been instituted.

It was filed December 27th last in the Federal court in Buffalo, Rudge-Whitworth and the Standard Roller Bearing receivers seeking to restrain the Houk company from using the name Rudge-Whitworth and from making and selling wire wheels embodying features covered by the English company's patents. The receivers of the Philadelphia company set up that it has the sole right to use the name Rudge-Whitworth and possesses the exclusive license to operate under the Rudge-Whitworth patents.

The suit is in the nature of a surprise, as it has been the general understanding that George W. Houk held rights under the Rudge-Whitworth patents. Until September last he was identified with the Standard Roller Bearing Co. and marketed the wire wheels made by it. At that time he acquired a controlling interest in the McCue Co., of Buffalo, and changed its name to Houk Mfg. Co., his rights under the Rudge-Whitworth patents, it was stated, being one of the chief influences in bringing about the deal.

Dealer Hopes to Collect Bankrupt Claim.

Col. Kirby C. Pardee, one of New York City's veteran dealers, hopes to collect a claim of \$3,461.38 which he has against the Inter-State Automobile Co., despite the fact that the latter company went into bankruptcy some time ago; his claim was for commissions on cars which he claimed were delivered in his territory in payment of Inter-State debts while he was the company's representative for New York City and environs.

He secured attachment in the Supreme Court for New York county and tied up several cars that had been shipped to him on consignment; to release the cars the Inter-State company gave a bond, signed by the New England Casualty Co., which, in effect, was a promise that if the cars were released

the Casualty company would make good any judgment which the Inter-State failed to pay.

Pardee went ahead and secured a judgment, and now that the Inter-State seems unable to meet it he is suing the Casualty company for the amount.

Three Tradesmen Join Silent Majority. Jeremiah P. Toman, of the firm Toman Bros., Trenton, N. J., and one of the best known dealers in that State, was found dead in bed at his home on Thursday last, 1st inst. Death was due to neuralgia of the heart. Toman was 52 years of age.

Cyrus E. Mead, of the Mead Engine Co., Dayton, O., and inventor of the rotary valve motor used in the Speedwell car, died Sunday evening last, 4th inst., from the effects of injuries sustained when the motor car he was driving was struck by a trolley car, near Dayton. He was 40 years of age and a Spanish War veteran.

C. Howard Gillette, a son-in-law of Col. George Pope, who had served in the automobile trade both in New York and Hartford, Conn., committed suicide by shooting himself in the head, Sunday evening last, 4th inst., at his poultry farm in Windsor, Conn. Gillette, who was well known also for his A. A. work in earlier years, was 38 years of age. He is survived by his widow and five children.

#### Leather Goods Man Involved in Oil.

Fred G. Ten Eyck, who trades in Auburn, N. Y., as the Auburn Leather Goods Co., is the defendant in a suit filed this week in the Supreme Court for New York county by the Indian Refining Co. of New York; the claim is that between June 21 and August 26, 1913. he received goods to the value of \$82.78 and paid but \$25, leaving a balance of \$57.78.

#### Harrises Restart Milwaukee Motor Plant.

Under the auspices of Harris Bros. & Co., the Chicago housewreckers, the plant of the bankrupt Milwaukee (Wis.) Motor Co., which they purchased at the receiver's sale for \$85,000, resumed operations on Monday last, producing motors, as before the failure. It is the Harrises' intention to rehabilitate the property as a going concern and then to dispose of it.

#### Gillette Roller Bearings Change Hands.

Herbert G. Gillette and the R. G. Peters Co., of Grand Rapids, Mich., have disposed of their rights in the Gillette automobile tapered roller bearings to Eastern men who have organized the Gillette Roller Bearing Co. The latter has been incorporated under the laws of Delaware with an authorized capital of \$350,000, of which \$250,000 is represented by common stock.

## PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few Leave the Industry.

C. Louis Fitzgerald has resigned the management of the Packard branch in Newark. It is his intention to go into the automobile business on his own account.

Ralph Ketchum, previously connected with the R. & L. Co., of Boston, has been appointed manager of the New England branch in that city. He succeeds H. B. Pruden.

T. F. McGinnis, sales manager of the American Tire & Rubber Co., of Akron, O., has resigned that office to become identified with the Marathon Tire & Rubber Co., of Cuyahoga Falls, O.

E. P. Dowse, of Grand Rapids, Mich., has been appointed manager of the Toledo branch of the Goodyear Tire & Rubber Co. He succeeds M. M. Norton, who has been advanced to the post of district manager.

C. F. Reynolds has been appointed manager of the Ford branch in Cincinnati. He succeeds M. A. Enders, who recently was transferred to the management of the branch in Fargo, No. Dak., a much more important post.

Frank L. Moore has been appointed manager of the H. W. Johns-Manville Co.'s Indianapolis branch. Moore is president of the Indianapolis Automobile Trade Association and was connected with the Fisher Automobile Co. of that city.

F. H. Casebeer, manager of the Goodyear tire branch in Oklahoma City, has been promoted to the management of his company's St. Louis branch, succeeding John A. Maroney. F. J. Arling, Jr., who previously was identified with the St. Louis establishment, has been placed in charge of the Oklahoma City store.

Clarence A. Earl, for many years identified with the Corbin Screw Machine Corporation, of New Britain, Conn., during which period he advanced from star salesman to second vice-president and general manager, has resigned those offices to become vice-president and assistant general manager of the Hendee Mfg. Co., of Springfield, Mass., which manufactures Indian motorcycles. He, however, will remain with the Corbin establishment for several weeks, or until the transfer of his duties can be conveniently assumed by Charles Glover. who founded the Corbin screw machine business and who was president and in charge of it until Earl's elevation.

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#### SHOCKING THE MONEY MANIACS.

Small wonder that the world stands agape because of the action of Henry Ford and his associates. In this era of money madness, it is so usual for men individually and as corporations to seek to obtain all the money in sight, and, obtaining it, to let none of it pass their immediate circle, that the spectacle of a man, or corporation, permitting wage earners to participate not in thousands but in millions of profits and in the fullest sense of the term and in most practical form, is sufficient to increase the mental anguish of most of the money maniacs and to recall the smaller number to their senses.

The Ford profit-sharing plan lets fall on the workaday world not merely a ray of sunshine but a whole flood of it, and contributes more to the solution of so-called social problems than do all the gifts of libraries, or statues, that ever were made. The plan is so splendidly worked out that it makes not merely for the betterment of workingmen but of all mankind. It makes for human happiness; it makes for skill, for efficiency, for loyalty, for sobriety—for all of the other nobler qualities; it places such a rare premium on them that even the humblest man cannot misun derstand it. It is an appeal, and a stirring and substantial appeal, to the material man. It is an inspiring example of

how to overcome the lust for gold. For of what use is wealth when it accumulates beyond the dreams of avarice? What does it profit a man if he piles up more riches than he, or those who come after him, can ever spend? What profit to forever pyramid the dollars and by pyramiding paper to wring still more of them, not one of which can be taken to the Great Beyond! How empty are the excuses so often offered!

Every man's wealth is made at the expense of many men's toil. When placed beyond fear of want, how better than to share the wealth with the toilers, even though there be some who prove ungrateful?

It's a hard, cold world and there will be money madmen whose lips will curl at thoughts of the Ford action, but if it gives to even a few of them a mental twings—if it stirs the inner conscience of even a small number, it will have served more than the men who will share the princely bounty.

Henry Ford and his fellows have shown the way to that upliftment of the world of which we hear so much and see so little. Let those who will, rail at its effect on the labor market, it was a magnificent act performed in a magnificent way.

#### EMERGING FROM A STATE OF MIND.

If the comparison of notes which comes of the New York show has served more than one purpose, it has served no better one than to lift the clouds or melt the gloom which has hovered over or enshrouded a portion of the trade. The men engaged in it have discovered that while fogs sometimes hide the sun and that gloom is depressing, they are largely of their own making.

The men in the automobile industry have finally awakened to the fact that conditions of which they have complained are not peculiar to their own business, which, in fact, has been less affected by them than have many other trades. They have found, indeed, that there are many reasons why they should count themselves fortunate and few reasons why any great number of them should bemoan their lots

They have learned that some of their sorrows were of their own making and that many of them were purely imaginary. In other words, the industry has been too largely affected by what may be termed a state of mind, which if it has served to slow up the spendthrifts has not been lacking at least one good point.

The failures that have occurred have served to clarify the atmosphere and it now is plain to be seen that the wheels of industry are still moving and that automobiles by thousands are still being made and sold.

The "poor mouth" has not been distinctly observable during the show; there has been little or no scandalmongering concerning financial conditions, and such of it as has transpired has been of a very cautious and subdued sort. The scandalmonger, whose tongue but a few weeks since was wagging industriously, has been driven into a hole. Motor World, and the other trade papers, that turned on him never more quickly or more effectually proved their worth to the interests for which they stand. They have practically silenced the he-gossips who had most to do with bringing about the state of mind that affected the industry.

#### "UNCLE HENRY" LELAND IS MADE S. A. E. PRESIDENT

Clarkson and Cuntz Only Officers Reelected—Another Trip to Europe is Planned—Constitution Being Revised.

Henry M. Leland, the white-bearded "Uncle Henry" of the Cadillac Motor Car Co., is the new president of the Society of Automobile Engineers. He was chosen at the annual meeting of the society, which opened its usual three-day session at the Automobile Club of America, in West 54th street, New York City, on Tuesday morning last; Leland succeeds Howard Marmon of the Nordyke & Marmon Co.

As in the past, no opposition to the prepared slate appeared, and all the others whose names appeared upon it were elected. These include W. Guy Wall, vice-president of the National Motor Vehicle Co., first vice-president, succeeding J. G. Perrin; K. W. Zimmerschied, General Motors Co., second vice-president; members of the council. H. C. Wilson, succeeding Charles B. Whittelsey; Christian Girl, president of the Perfection Spring Co., succeeding A. B. Cumner. A. L. Riker also retires from the Council; his successor will be appointed by the new Council. Both H. F. Cuntz, treasurer, and Coker T. Clarkson, secretary, were reelected.

Not the least important part of the meeting was the announcement by ex-President Marmon that plans are maturing for a second trip to foreign shores, probably during the fall of the present year; it is expected that definite action will be taken at the summer meeting, which it was definitely decided will be held at Cape May, N. J.; though the dates have been tentatively set to bring the meeting between the 22d and the 27th of June, no definite selection has been made.

Because the constitution under which the society operates appears inadequate and is somewhat limited in scope, it is proposed to make material revisions in it. The proposed amendments are voluminous, and among other things provide for what are termed Departmental members which "shall be a department, bureau or office of a National, State, County, or Municipal government interested in the object of the society." Such members take the place of international members and pay no dues, the initiation fee being \$100. At the same time the election of all grades of members by mail vote will be abolished, the council holding all discretionary powers in this respect. Action tending toward the adoption of the amendments will be taken at the summer meeting. According to the tellers of election, the COMING

Jan. 2-10, New York City—Importers' annual automobile Salon in Hotel Astor.

Jan. 3-10, New York City—Automobile Chamber of Commerce's national automobile show in Grand Central Palace.

Jan. 5-10, Los Angeles, Cal.—Show in Grand avenue Pavilion.

Jan. 7, New York City—Eleventh annual meeting of the Motor Accessory Manufacturers in the Waldorf-Astoria.

Jan. 7, New York City—Sixth annual banquet of the Motor & Accessory Manufacturers in the Waldorf-Astoria.

Jan. 8, New York City—Annual banquet of the Society of Automobile Engineers in Hotel Plaza.

Jan. 10-16, Milwaukee, Wis.—Milwaukee Automobile Dealers' Association's sixth annual automobile show in the Auditorium.

Jan. 10-17, Cleveland, Ohio—Cleveland Automobile Show Co.'s annual show in Euclid Square Exposition Hall.

Jan. 10-17, Philadelphia, Pa.—Philadelphia Trade Association's show in the Metropolitan building.

Jan. 12-17, Bridgeport, Conn.—Second annual show in the State Armory.

Jan. 14-21, St. John, N. B.—New Brunswick Automobile Association's second annual Maritime Motor Show in the Armoury.

Jan. 19-24, Washington, D. C.—Automobile Dealers' Association's show in Convention Hall.

Jan. 20-24, Baltimore, Md.—Baltimore Automobile Dealers' Association's show in the Fifth Regiment Armory.

Jan. 24-31, Montreal, P. Q.—Montreal Automobile Trade Association's pleasure vehicle show.

Jan. 24-31, Rochester, N. Y.—Rochester Automobile Dealers' Association's annual show in Exposition Park.

Jan. 24-31, Chicago, Ill.—Automobile Chamber of Commerce's national automobile show in the Coliseum and First Regiment Armory.

Jan. 26-31, Scranton, Pa.—Automobile show in the State Armory.

Feb. 2-7, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's pleasure vehicle show.

membership of the society has increased by 184 since the last summer meeting, the total number of members of all grades now enrolled being in excess of 1.700. The treas-

Jan. 31-Feb. 7, Minneapolis, Minn.—Minneapolis Automobile Trade Association's seventh annual show in National Guard armory.

Feb. 3-7, Montreal, P. Q.—Montal Automobile Trade Association's comments vehicle show.

Feb. 3-7, Kalamazoo, Mich.—Kalamakan Automobile Dealers' Association's fifth nual show in the State Armory.

Feb. 4-7, St. Joseph, Mo.—St. Joseph tomobile Show Association's Show.

Feb. 7-12, Seattle, Wash.—Annual show in the State Armory.

Feb. 7-14, Cincinnati, O.—Automobile Trade Association's show in Union Central Life Building.

Feb. 9-14, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's commercial vehicle show.

Feb. 14-21, Pittsburgh, Pa.—Pittsburgh Automobile Show Association's fourth annual show.

Feb. 14-21, Pittsburgh, Pa.—Pittsburgh Automobile Show Association's show in Exposition Hall.

Feb. 16-21, Kansas City, Mo.—Annual show.

Feb. 16-21, Toronto, Ont.—Toronto Automobile Trade Association's 10th annual show in Transportation and Horticultural Buildings.

Feb. 21-28, Newark, N. J.—New Jersey Automobile Trade Co.'s show.

Feb. 21-March 4, Cincinnati, O.—Automobile Dealers' Association's show in the Music Hall.

Feb. 22-March 1, Hartford, Conn.—Automobile Dealers' Association's show in Park Casino.

Feb. 23-28, Omaha, Neb.—Omaha Automobile Show Association's annual show.

March 2, 3, 4, Cincinnati, O.—Automobile Dealers' Association's commercial vehicle show in Music Hall.

March 2-6, Fort Dodge, Iowa—Automobile Dealers' Association's show in the Armory.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics' Building.

March 9-14, Des Moines, Ia.—Automobile Dealers' Association's annual show.

March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics Building.

urer's report reveals that during the past year the total receipts have been \$20,806.36 and the disbursements \$11,991.45, leaving a balance of \$8,814.91.



It marks much that is of very much more real importance to the industry, but it may be said at the very outset that the New York Automobile Show of 1914 marks the passing of the theatrically dressed exhibition.

There are no mountains or valleys, no landscapes nor waterscapes, no mirrors, no flags or banners—"no nothing" of that sort in the show which opened in Grand Central Palace Saturday afternoon last, and which will hold the boards until Saturday night next. In this respect, it is the most undressed show that can be recalled; the lavish hand of the decorator is not seen but, despite the fact, it is one of the most pleasing, if not the most pleasing that ever was looked upon.

The Palace, at least the main floor, with its many noble Corinthian columns, is a superb spectacle in itself and, though beauty unadorned sometimes may be most impressive, it is not to be denied that even bare marble columns, however noble, are but coldly inviting.

Manager Miles, who, on behalf of the Automobile Chamber of Commerce, attends

to that sort of thing, has relieved the nakedness of the columns by the gentlest of decorative treatment, merely by figuratively planting smilax and other soft greenery on the capitals of the columns and permitting them to depend loosely, but in profusion, giving a deft touch that is wonderfully superior to climbing plants or festoonery. There are enough of colored blossoms amid the greenery to add to the "warmth" of the atmosphere.

This same treatment prevails throughout the building, even unto the posts of the third and fourth floors. In addition, the great "well" of the Corinthian court and the balustrades of the stairways are somewhat similarly treated with greenery and blossoms of the same sort. Each floor has a color blossom all its own. The windows throughout the building are softly draped or curtained, a different hue also marking each floor. It is all wonderfully simple and impressively artistic.

The only suggestion of the old order of decorative things is the kneeling show girl. cast in plaster and wounted on pedestals, who greets the show-goer as he enters the Corinthian court and who looks upon him, not unpleasantly, as he wends his way from floor to floor.

If the Metropolitan public is any way tiring of automobile shows, the evidence of it is not very visible; in fact, a cold, chilling rain on opening night served to indicate that the contrary is the case. The building was comfortably filled at all times, and the succeeding days and nights have merely added to the numbers; in truth, the attendance has been surprisingly large—it has surprised even the promoters of the show. Although the whole show is in the one building the total number of exhibitors is only 75 less than last year filled both buildings, and the total number of cars and chassis is but 7 less.

It's a tremendously big show, that show in Grand Central Palace. And it requires a stout heart and a stouter pair of legs to take in all its wonders. No Eastern bazaar has anything on the "14th annual" for variety, or for color, or crowds, or noise—curious noises that make one turn one's head involuntarily. The continual hum, contributed in part by seeker and sought

and by spark plugs that spark from morn till night and by whirring electric motors and shocking shock absorbers-they really are absorbing-is continually punctured by the bleat of an electric horn from which the works have not been removed, as per instructions issued to exhibitors, and those who are not jarred out of more than two of their five senses surge onward in search of fresh encounters.

These things happen on all four floors. of course. You are shooed toward the elevators directly you come off the broad marble staircase that leads to wonderland and a big sign over the smooth-slipping cars informs you that you can ride up but not down. The chauffeur of the elevator you enter will explain if you ask him. He is weary of explaining, in fact. The idea is this: They get you up and, though they are by no means sure that you will stop off at each of the floors on the way down, they rely upon your cupidity to lead you out among the exhibits. It's a good scheme. for it works. Nearly every one rides up and then sort of filters down again. It takes hours to get to the main floor if you just make a casual survey of the two that come in between. Incidentally, this elevator scheme has been responsible for more people going up the world than ever went up at Madison Square Garden or the Palace before.

A knot of interested onlookers on any of the floors surely indicates something with wheels that whir, or something that has some kind of movement. It is curious, for instance, the way the crowds will gather around such a simple piece of mechanism as the Cartercar friction transmission system-a system that has been exhibited practically as it is exhibited now for several years but from which the power of attraction never seems to wear away. From morning till night there is always a "jam" around the white Cartercar chassis intent upon the noiseless rotation of its wheels. and no one asks "Why?" because it is not necessary.

#### Old but Still Proves Entertaining.

There are at least two other exhibits that are just as crowded during all the hours of the show as is the Cartercar. One of them is the Cadillac, which holds a very much mutilated chassis with all of its various parts, including the new two-speed rear axle, in full play, and the other is the Jeffery. The Jeffery exhibit, of course, is the new "four" chassis, and at both there is a leather-lunged lecturer to draw attention to the advantages, mechanical and otherwise of each and to answer questions. Doubtless either chassis would draw a crowd of itself, but there can be no doubt that the lecturer "helps out," so to speak.

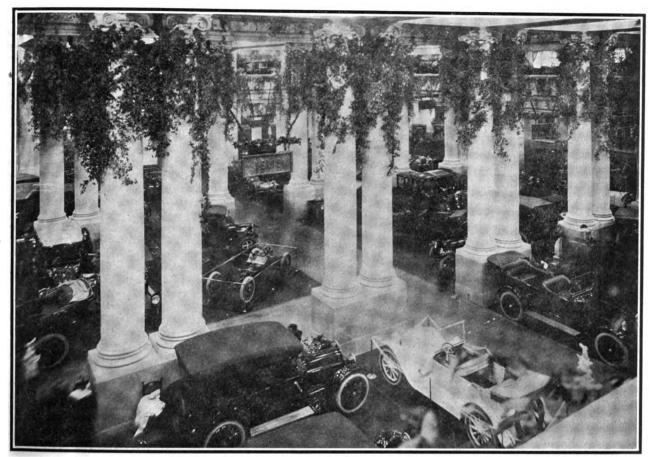
The crowds that gather about these three exhibits are noticeable because they are big and they are big because the exhibits are big and there is lots of room around the polished rails that distinguish the spectators from the spectacle. At the Chalmers stand, for instance, there is always just as interested a group of onlookers, if it is not quite as large. The exhibit that draws in this case is in a glass case; it is the complete Chalmers-Entz electric lighting and engine starting system that is such a prominent part of all the Chalmers cars. There is a lecturer here, top, and he carefully exhains exactly what happens every time



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OVERLOOKING THE VELIE EXHIBIT ON THE MAIN FLOOR AND SHOWING THE EFFECTIVENESS OF THE HANGING GREENERY

he presses the button and sets the wheels to moving. At the Buick exhibit, the little overhead fingers that have given the Buick engine its fame never fail to attract, though they are only a small part, though a mighty important one, of the polished chassis they help make.

#### Two Which Hold Gaze Firmly.

Of moving motors there are many, most of them "turning over" lazily though none the less surely under the stimulus of their own starting gear. At the Oakland stand, for instance, there is one of the new "light six" motors with part of its detachable cylinder head detached, and the crowds of passers-by gaze for minutes at a time at the steadily rising and falling pistons as if they expected them to go down for the last time any minute; but they always come up bright and shining and make quite clear just how easy it must be to clean away the carbon from an Oakland engine.

Wandering from one moving exhibit to another, those who finally reach the Great Western stand and expect to see the conventional type of poppet valve motor are mightily surprised, for the exhibit holds one of the real surprises of the show. Of

course, it was to be expected that there would be some surprises, for not even the care and the pains that brought forth Motor World's big Before Shows Issue could ferret them all out. So there is a surpriseone of the few-at the Great Western stand. The motor has neither poppet valves nor sleeve valves nor rotary valves; and when it is added that it has no piston heads either, its identity is practically established, for it is the only one of the kind. It is the Carter motor, of course, and henceforth it will appear in all of one model that bear the Great Western nameplate. No, it has not displaced the poppet-valve motor, for as it is explained by one of the salesman, "There are still some people from Missouri." It is an addition. The casting is sectioned for the edification of those who care to look, and the way the movable combined piston heads and valves alternately rise and fall and stop a fraction of a second has caused more than one person to rub his or her eyes.

#### Great Western a Real Surprise.

But one rub generally is enough to start the man in charge of the exhibit to explaining the why and the wherefore of the seemingly erratic movements of the parts and his explanation is a great deal more lucid than is the statement of a salesman in another part of the building who calmly informed the Motor World man that the particular engine under discussion has "thermosiphon ignition"!

#### Big Green Monster Locomobile.

Barring things that move, bright colors attract most quickly and there is the usual sprinkling of "show" cars to draw Chs! and Ahs! from those who see them. On the main floor probably a big green Locomobile touring car first catches the eye of the person who takes a hurried survey of the layout. And it is quite as likely to hold the eye as it is to catch it. From stem to stern the car is green-the shade has no name, according to one of the men in charge of the exhibit-and it fairly oozes an appearance of smoothness and softness and luxury that defies description. The upholstery is brand new in conception. Instead of being tufted or criss-crossed, it is plain and smooth and-yes, slippery. The cushions do not stop at the top of the body but are carried clear over to form rounded fenders and protect elbows against unusual

CENSUS OF THE NEV	he Stat		13	Dalace
Garde		Palace Gra		14
Total Exhibitors Exhibitors of Cars Exhibitors of Accessories Exhibitors of Motorcycles	89 320 15	424	78 259 12	349
GASOLÈNE C	ARS			
Two Cylinders Four Cylinders (piston valve) Four Cylinders (sleeve valve) Six Cylinders Six Cylinders (sleeve valve)	0 169 0 6 86 4		2 132 1 8 98 2	
Six Cylinders (rotary valve)	1		1	
Total Gasolene Pleasure Cars Touring Cars Roadsters Limousines Berlines Coupes* Phaetons Landaulets Raceabouts Sedans Cabriolets Cyclecars	162 49 23 8 19 1 0 2 0	266	143 50 15 6 17 2 1 2 14 5	264
Air Cooled Cars	5 261	266	6 258	264
	_	266		264
Four Cylinders Six Cylinders Electric	27 21 1		21 15 1	, 201
ELECTRIC C	ARS	49	_	37
Coupes Runabouts Broughams Town Cars	7 3 0 0	•	2 1 13 1	
Special Exhibits-		10		17

jounces. Both front and rear seats are divided by fairly high roll-like partitions, and the two rear seats thus formed have all the appearance of miniature Morris chairs. In point of fact, they are Morris chairs, for both seat and back are adjustable through a wide range of positions.

Racing Cars .....

Grand Total all Cars and Chassis......

Includes Convertibles.

Nor is the green "Loke," as it is affectionately styled by those who know the name well, the only one that appeals to esthetic senses. Beside it there is a double limousine that is a genuine work of art. The body, styled a Longchamps, was designed by Petite and built by Burr & Co., and if these two names are not enough to call up visions of loveliness the car itself will do so. Outside, lavender and black are the prevailing colors, though the juxtaposition of the two has been so arranged that they literally blend into each other. Inside, the upholstery and hangings are done in

imitation of early French tapesty, and set off with gold-plated fittings. The woodwork is a special kind of Mexican oak, and even the rug comes from a far-away land. It was made to fit the body and imported especially for the purpose. By way of carrying out the scheme of beauty and exclusiveness, there are two miniature pillar lamps at either side of the back; they mount red incandescent bulbs. From a strictly utilitarian point of view the body has many attractions as well, not the least of which are the ventilators over each door and at the back

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Next door to the Locomobile exhibit there is the Peerless exhibit and it, too, holds a closed car that comes near to being the last word in luxury. Loosely speaking, it is a Sedan, though the Peerless people have given it the qualifying adjective "salon," and the body itself suggests all

that the designation implies. It is, in fact, a drawing room on wheels, even to the mahogany chairs, the rich carpets and the richer hangings. The car is a fit successor to the Colonial brougham that attracted so much attention at the Peerless exhibit last year.

#### Real Chairs a Peerless Luxury.

Instead of the usual seats in this Peerless work of art, there are richly upholstered mahogany chairs-real chairs that can be moved about at the whim of the occupant; to those who have studied such things it is plain that they are of the Georgian period; they were designed and built, it is pointed out with no little pride, by the Rorheimer-Brooks Art Studios. The cushions are covered with tapestry and filled with English down. Further delving into the interior brings to light that the pillows are of Italian brocade with silk tinselled velvet borders. Another glimpse of the richness of the fittings may be gleaned from the fact that the draperies are silk broche lined with silk taffeta.

Side by side with this car there is another that is scarcely less striking in appearance. It is done all in dark blue and, except for the fact that a special type of imported material has been used for the upholstery, conforms to the standard Peerless car. As such it reveals a number of interesting improvements that will characterize all Peerless closed cars for the coming season. Windows, for instance, are sashless, of the Swiss railway type, and are much larger than they have been in the past; the sides and the back of the car, in fact, are nearly all glass. The auxiliary seats, too, are new, and appear for the first time. When they are in use they are unusually roomy and are deeply upholstered; but when they are not in use they fold up completely out of the way into a recess in the inter-compartment. Incidentally, so that milady, or anyone else, need not strain to catch the ear of the chauffeur, an electric telephone takes the place of the usual tube and whistle.

#### Wealth of Color in Stevens-Duryea.

Although these are the only real "show" cars, there are others, of standard construction and fitting, that are scarcely less attractive. There are two beautiful Stevens-Duryea limousines, for instance, that will take a lot of beating. One is a fairly light fawn color, with cloth upholstery in the rear compartment to match and leather of the same color for the driver's compartment, outside the colors are a pretty combination of brown and black. The other is done in a darker shade of fawn, bordering on brown, and is upholstered completely in brown cloth with trimmings of a material which looks and feels like satin.

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#### MOTOR WORLD

For the most parts, colors are of somber hue, with only here and there a brilliant car to stand out conspicuously. There is a bright red Fiat roadster, for instance, that cannot fail to attract attention, not so much for its color as for its finish, for it is like nothing else of its kind. It is neither bright—varnished—nor dull; it is betwixt and between the two, a sort of satiny gloss that irresistibly draws the fingers of those who see it—to the discomfiture of a guardian evidently placed close to it to prevent just such curious fingers marring the delicate surface. Of white cars there are several, among them a Velie with nickel trimmings,

In fact, 'there appears to be a tendency, even though slight, to get away from the highly finished gloss that generally is taken to mean quality. Instead, several makers exhibit cars that are practically "glossless," to coin a word; they look as though, after the varnish had been applied, it had been carefully rubbed down just sufficiently to dull the shine without detracting from the general appearance.

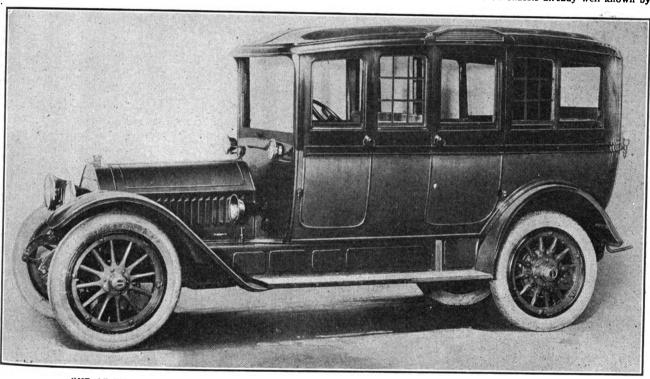
#### Landaulet Roadster Makes Appearance.

Closed cars are not quite as much in evidence as has been the case at previous shows, though there is one type of closed

ible bodies of an entirely different type, but which serve practically the same purpose.

In both cases, the upper portion, which makes a roadster into a coupe in about 10 minutes, is completely detachable, though when it is on or when it is off either car looks exactly like a normal car; in other words, the connection between upper and lower portions is cleverly hidden, and what is far more important, there is not the slightest chance of dust or water working in.

Some of these newer types of bodies are exhibited on chassis already well known by



ONE OF THE MOST STRIKING OF THE REAL "SHOW" CARS-THE LOCOMOBILE LONGCHAMPS BERLINE

and at the Cadillac stand there is an olive drab roadster that is out of the ordinary; the Cole stand also has a white roadster; two bright yellow cars, one a rakish roadster and the other a touring model, grace the Lozier stand; there is an Oakland touring car done all in green cloth upholstery; a gray Packard roadster with an ingenious "dickey" seat out behind; a green convertible roadster-coupe at the Pierce-Arrow exhibit; and so it goes, not forgetting a new type of Kissel body in which the forward seats are set wide apart with a passage between them; the body has only two doors -one on either side-for the use of both those who sit in the tonneau and those who sit "up front."

That satiny finish that appears so prominently on the red Fiat roadster is a feature of quite a number of other cars as well. or open body that surely is increasing in popularity. To be brief, it is the cabriolet, or coupelette, either designation amounting to the same thing and indicating a type of coupe body that has a back which can be folded down, after the manner of a landaulet, so as to leave the car to all intents and purposes an open roadster—and in most cases an uncommonly good-looking one, too.

#### Cabriolets Neat and Convenient.

Naturally, the Studebaker cabriolets, both "four" and "six," serve as magnets quite as much for their neat appearance and their perfectly apparent utility as for their comparatively low price. Oakland, Keeton and Hudson also exhibit bodies of this type, there being not a great deal of difference between them, and at both the Pierce-Ar-

reason of their years of service and some are shown on chassis that are fresh from the draughting table, but whether they are new or old, one and all very forcefully emphasizes the trends and the tendencies that were laid down in Motor World's great Before Shows Issue-the movement toward left-side control; the increase of "light sixes"; the increase of small-bore highspeed "sixes"; the streamline bodies; the molded fenders; the concaved skuttles; the wider doors; the side lamp elimination; the rear and cowl fuel tanks and rear tire carriers; the increase of detachable cylinder heads and block casting; the electric gear shifters; the cantilever springs; the enclosed speedometer drives; the one-man tops and the increased equipment. These are the things that Motor World's Before Shows Issue exploited as the things to look for-

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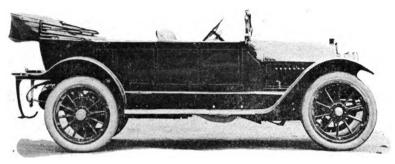
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#### FOUR OF THE MORE IMPRESSIVE OF THE NEW MODELS



IMPRESSIVE LOOKING NATIONAL "SIX" WHICH SELLS FOR \$2,375



NEW STEARNS-KNIGHT FOUR-PASSENGER TOURING MODEL

the newness that would be revealed. And now that it has been revealed, there is little that can be added to that forecast; here and there, clever little "wrinkles" in design have cropped out in unexpected places, though there is nothing that is really startling that remains to be told.

Due to the smoothing hand of refinement that has been passed over older models, there are few indeed that have not taken on a newness that is compelling, though it is but natural that chief interest should center around the cars that really are new throughout—cars that make their first formal appearance.

#### "Newness" and "Sixes" Companions.

All told, there are some 31 different makes of cars on exhibition that come in this category, and as a fair indication of the tendency toward six-cylinder construction, suffice it to add that no fewer than 19 of them are "sixes"; the rest of them are "fours," and the list does not include the handful, figuratively speaking, of cyclecars that never fail to draw crowds around their miniature bodies.

Among the new "sixes" that are first time out, so to speak, the Nationals—one an unusually clever coupe and the other a sleek-looking touring car that is the acme of smoothness—are truly wonderful exponents of the trends and tendencies of the times. From their compact block-cast motors to their streamline bodies and low-hung chassis they are thoroughly up to the last minute in design, a fact which is em-

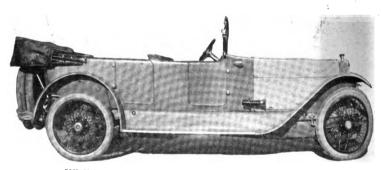
phasized by the incorporation of practically all of the individual features of the other new cars. The coupe is a particularly appealing piece of work, for in it the designers have successfully dodged the appearance of heaviness and unwieldiness that is so likely to mar the general effect of a body of the type.

The paintwork is in gray, relieved with black lower panels to the two wide doors. The roof is gently curved and ends in a fairly deep peak over the sashless from glass—a provision that is sure to be appreciated by those who drive "into the sun." Inside, the fittings are in gray, to match the rest of the color scheme, and the depth and softness of the cushions are practical assurances of comfort.

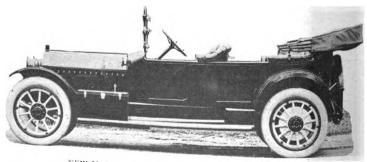
#### The National's New "Six" Motor.

It is in the mechanical aspects of the chashowever-the chassis is the same for both models-that the light that guided the designer shines forth. The six cylinders are cast in a rigid block-of itself one of the noteworthy marks of progress of the coming season-and the bore is fairly small, though not too small to prevent the generation of the excess power that National cars always have been noted for; pistons measure 334 inches and the stroke is 51/2 inches. In this respect, it is worthy of mention that these two dimensions represent what is practically a concensus of opinion on the part of engineers in general who have eagerly sought for higher efficiency.

In its material aspects the new motor is exceedingly simple, and though a place has been found for everything in proper order, including, as a matter of course, the electric lighting generator and the engine statter and the tire pump, which, by the way, is properly built in, there is no cluttering up of accessories. A glimpse of the manifolds and the method of holding both in place



SIX-CYLINDER PALMER-SINGER FISCHER-ENGINED MODEL



NEW MARMON LIGHT "SIX" WHICH SELLS FOR \$3,250

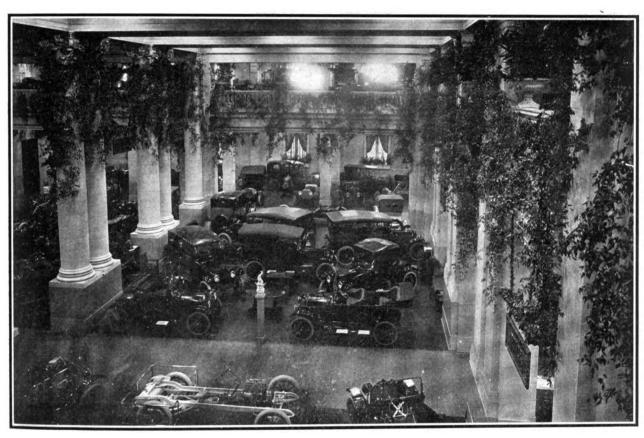
#### MOTOR WORLD

with the same fastenings, makes plain the careful manner in which the design has been carried out. The camshaft is driven by spiral gears and, by way of emphasizing the accuracy of construction, it is pointed out that it is ground to the one-thousandth part of an inch. Lubrication is carried on by constant level force feed oil with gear-driven pump, the capacity of the reservoir being three gallons.

The clutch in the new National "six" is of the self-contained cone variety with

type that surely is increasing in popularity, primarily by reason of its easy action and the practical elimination of excessive rebound. To the King, which has always had cantilever rear springs, and the Willys-Knight, which made its first appearance last year as the Edwards-Knight with cantilever springs, there now have been added two more—the National and the Pathfinder. In the National arrangement, the springs are swiveled to the frame and attached rigidly to the rear axle. Between wheel centers,

that though the engine is only 12 horsepower less than that in the larger Chalmers "six," the car complete tips the beam at some 1,200 pounds less than does the other. In construction, the new car is quite like its predecessor, with a few exceptions, and a difference in the size of parts commensurate with the engine sizes. In this motor, too, there is evident the tendency toward block construction, the six-cylinders which, by the way, are of the T-head type, being in a single casting. Their measurements are



VIEW OF THE "CORINTHIAN COURT" FROM MEZZANINE GALLERY-STUDEBAKER DISPLAY IN CENTER

spring inserts that make for easy engagement, and another feature significant of modern construction is that the whole assembly can be removed bodily without the necessity for disturbing other parts. Back of the clutch there is a three-speed selectively-operated gearset with the control lever at the driver's right hand, the steering gear being at the left side. Further along, the drive is by shaft to bevel gears of the usual type to a full-floating rear axle in which accessibility has been made the keynote.

In the spring construction there is apparent still another indication of the care with which National designers have watched developments. The front springs are of the semi-elliptic variety. 38 inches in length, and the rear springs are of the cantilever

the length of the car is 132 inches, though this length is rather augmented, without giving an appearance of unwieldiness, however, by the extreme streamline form of the body. Needless to add, the equipment is complete, despite the fact that the price has been so moderately placed at \$2,375, and includes all the usual fittings and accessories.

#### Chalmers "Six" that is "Light."

Among the still newer "sixes"—one of the few, in fact, that escaped more than very brief mention in the Before Shows Issue, because of their late announcement—the Chalmers is more than ordinarily suggestive of the marked tendency toward weight reduction. By way of making plain that the car really is a "light six," it is pointed out 3½ x 5½ and the drive is through a special type of multiple disk clutch, three-speed gearset and the orthodox type of full-floating rear axle containing bevel gears. The wheelbase is 126 inches and the chassis is mounted on semi-elliptic and three-quarter elliptic springs in which the main leaf is formed of vanadium steel.

Externally, the new "six" is so much like its larger predecessor that no one will ever have any difficulty in tracing its ancestry. The shape of the body is slightly different and there are a few other little differences that make for the comfort of passengers. The upholstery of the front seats, for instance, is carried up over the front doors to protect the elbows of those who ride "up front," and these little cushions open with the doors—a feature of construction which

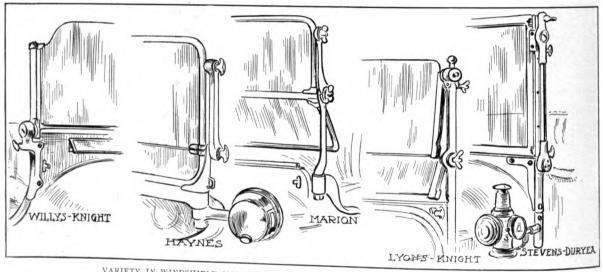
is noticeable in only one other brand of cars at the show—namely, the Velie.

The Velie people, by the way, have taken unto themselves a new six-cylinder model which is a fit compeer to the "fours" that so long have carried the Velie trademark. In this case, however, the cylinders, which are of the L-head type, are not in a block but are cast in triplets, the bore and stroke being 334 x 514 inches. Strictly speaking, the car is a conventional one and reveals a symmetry of appearance that has been gained by a not too strict adherence to straight lines. Thus, for instance, the doors, instead of being perfectly straight, have very slight curves at the bottom, the front one in particular. Forward, there is a skuttle that is rather deeper than is usual and the windrigid unit power plant. The clutch is of the cone type. One of the distinctive little design wrinkles in the Oakland is the provision of an unusually commodious compartment for tools, or gloves, or anything else, directly before the driver in the deep cowl. A little door drops down on chains and provides a handy shelf. In the larger Oakland "four" model a significant change has been made in the motor dimensions, which now are 4½ x 5½ inches, instead of 4½ x 4½ inches.

#### Seven New "Sixes" En Bloc.

Among the other new six-cylinder models that have been placed on view for the first time, no fewer than seven have their cylinders cast in one block, the list including stroke six inches. Further along in the standard chassis there is little that is out of the ordinary, power being transmitted through a disk clutch and the orthodox type of four-speed selective gearset.

Of the others, the McIntyre "six," which, by the way, hereafter will be the only McIntyre—an uncommonly attractive touring model which sells for \$1,845—is the only other one that has T-head cylinders, the dimensions being  $3\frac{1}{2}$  x  $4\frac{1}{2}$  inches. Further along in the chassis the power is transmitted by a dry disk clutch of the conventional type and a four-speed gearset to floating rear axle. The body on this new McIntyre is one of the straightest of the straight-line creations, the engine hood being practically level with the top of the tonneau sides.



VARIETY IN WINDSHIELD MOUNTINGS SHOWING TREND TOWARD STRUT ELIMINATION

shield is mounted without filler board or struts of any kind.

#### Oakland Light "Six" "Different."

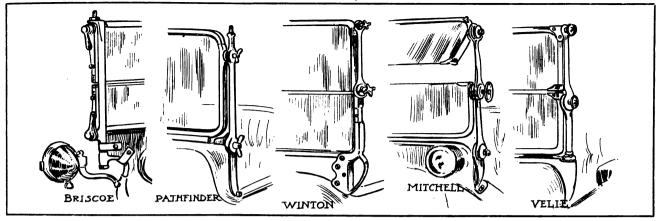
But to get back to the practice of casting all six cylinders in a block: The Oakland "light six," which really is a mighty big "light six," discloses construction that is quite unlike anything else of its kind. Though all six-cylinders are cast in a block -the bore and stroke, by the way, are 31/2 and 5 inches, respectively, and manifestly place the motor in the small bore, highspeed class that is becoming so popularthe cylinder head is in three pieces, one piece for each pair of cylinders and each held in place by its own bolts. Obviously, the construction affords a simple means of examining the condition of any particular cylinder head without the necessity for disturbing the fit of the other heads. Incidentally, the clutch and gearset, the latter providing three forward speeds, are incorporated solidly with the engine, making a Ohio, Apperson, Jeffery, Henderson, Keeton, Premier and McIntyre. Surely, this is sufficient indication of the slump toward this method of construction. Next to block casting, casting in threes is most popular, the list of engines so built including the new Hudson light "six," Chandler, Marion, Abbott-Detroit, Pathfinder, Pullman, and Marmon, the latter being a lighter "six" that just has been added to the Marmon line and which reflects many of the attributes of its larger brother.

Among all these block-cast motors, the Ohio, which is produced by the Crescent Motor Co., of Cincinnati, O., bears the distinction of being one of the very few that has its valves on either side, and though the combination of these two features generally has been suggestive of massiveness, the Ohio motor scarcely is less compact than many of those that have their valves all on the same side. Incidentally, the motor itself is slightly larger than most of the others, the bore being four inches and the

From the hood there is a gentle rise to the skuttle, which leaves plenty of room beneath it for a large gasolene tank with its filler outside, where it can be easily reached. Incidentally, the weight of the car with all the tanks filled is only 2,850 pounds.

#### Kerosene Carburetter a Curiosity.

The remainder of the new block-cast motors all have L-head cylinders and the dimensions do not differ very greatly-the Henderson measuring 334 x 51/2-this car, by the way, is the only one at the show that is fitted with a kerosene carburetter and the way the crowd surges around it makes very plain that not every one will be content to use gasolene during the coming year-and the Keeton measuring exactly the same, with the Apperson, at 334 x 51/4. slightly smaller. Needless to add, the Keeton is distinctive in appearance for, barring the Franklin, which is air-cooled, of course, it is the only one that has a sharply slanting hood. One of the individualities of the



MORE OF THE NEW WINDSHIELDS THAT ARE HELD SOLIDLY IN PLACE WITHOUT BRACES

Keeton that has been rendered necessary by the dash location of the radiator is a cleverly separable steering column which makes possible the removal of the body without the necessity for too much dismantling. Mention of the radiator also requires mention of the fact that the thermo-siphon system of water circulation that has been used in the past has given away to pump circulation. Incidentally, the Keeton is one of the growing class that uses a four-speed gearset in which the fourth speed is an overstep.

#### Clean Design in New Jeffery.

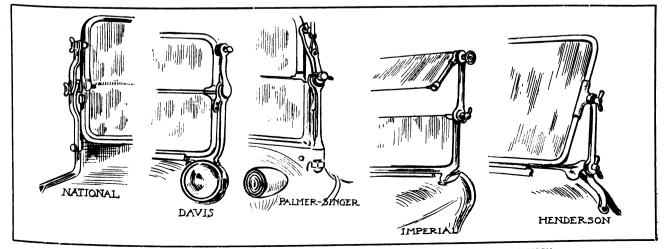
Although the new Jeffery "six"—and the new "four" as well—is block-cast and has all its valves on the same side, it is deserving of more than passing attention from any one, for in it the designers undoubtedly have made a tremendous effort to increase efficiency and the effort is plainly apparent to any one with an eye to see. The casting itself—the same applies to both "four" and "six"—is unusually clean, and without sacrificing strength has been kept down to the minimum possible weight.

It is frankly admitted by those who have

Jeffery matters in hand that in designing the new motor not one but quite a number of the ideas that have entered into its building have been adopted from the best that foreign practice affords. The result is quite apparent, even in the cylinder casting, which probably is as clean a casting as ever will come from a foundry. Of manifolds there are none, these necessary adjuncts being cleverly cast integral with the jackets, which are unusually liberal in dimensions. The motor is, without any qualifying adjective, a high-speed machine, and throughout its design this fact has been borne in mind. The pistons, for instance, weigh only about 31/2 pounds, as against a usual weight of anywhere from 3½ to 7 pounds. Light reciprocating parts naturally are conductive to high speeds, and it is pointed out by Jeffery engineers that at 2.200 revolutions a minute-which speed is reached without excessive vibration because of the light moving partsthe motor gives off 40 horsepower; the bore and stroke are 334 inches and 514 inches, respectively, and therefore represent a radical departure for the the Jeffery company, which heretofore has confined itself to the building of motors that came considerably nearer to fitting the adjective "square."

#### Force Feed Makes Oiling Certain.

Obviously, such high piston speed has required that the greatest of care be taken in the design of the oiling system, which is of a new type combining the best features of both internal force feed and constant level splash. A reservoir beneath the crankcase contains the supply of oil; from there it is pumped through a tube extending the entire length of the crankcase, with connections to each main bearing and to each camshaft bearing. The surplus oil drips into small troughs placed beneath the connecting rod bearings, which are fitted with scoops. Needless to add, the U.S.L. electric lighting and engine starting system. of which the Jeffery company was one of the original exponents, remains, though this part, too, has been thoroughly refined and the carbon disk regulation apparatus has been done away with. Instead, regulation is an inherent characteristic of the electric unit, which, as heretofore, takes the place of the usual flywheel.



STILL MORE VARIETY IN WINDSHIELD CONSTRUCTION THAT MAKES FOR CLEAN DESIGN

One of the newest of all the new features on the Jeffery cars, and it is a feature that is new to all American cars, is the leather universal joint that serves to connect the clutch and the gearset, the latter providing four forward speeds. In pointing out the new joint, it is explained that Daimler first used its prototype in the 'buses that ply on London streets to eliminate friction and noise, and after it had been demonstrated that it not only would stand up, but would perform its duties better than could any metal contrivance, Jeffery adopted it. Even in the gearset the doctrine of minimum weight has been carried to its logical conclusion-which means that this part of the transmission mechanism weighs less than 100 pounds complete. In it, four speeds are provided, the third speed being direct drive and the fourth a high gear for fast going on level roads.

In both the "four" and the "six" the construction is practically identical, except for a difference in the size of the parts, and in both cars the points that spell comfort and efficiency literally bristle. Just how far friction has been eliminated in these two cars is made plain by the fact that a pull of 40 pounds is sufficient to start either rolling across the floor. Nor are the cars small, considering other cars of like priceand weight. The "four" has a wheelbase of 116 inches and the "six" measures 128 inches between front and rear wheels. And, of course, they are both fully equipped--and, what is more to the point, most of the equipment is a product of Jeffery factories where its construction can be watched and its quality surely ascertained before ever it gets to a purchaser.

#### Premier-Weidely Motor "Sensation."

There remains only one other block-cast "six" among the new cars that are making their debut, and that one is unlike anything else either at this show or at any other show. It is, in short, the sensational Premier-Weidely motor, which reveals the altogether unusual combination of block-cast cylinders, overhead valves and a detachable cylinder head. As was made plain in the Before Shows Issue of Motor World, these three features are its most distinctive marks, as if any two alone would not be sufficient. In the flesh, or, rather, in the metal, the Weidely motor is even more impressive than it is on paper, for no amount of de scription can serve to convey to the average mind the really marvellous simplicity of the motor; with the neat aluminum housing over the single camshaft and its wormactuating gear at the top, there is not a single moving part in view, with the exception of the magneto shaft, of course. The valves are all covered, as a matter of course, and the clutch and gearset are contained in

a solid housing which bolts closely to the crankcase of the engine. Even manifolds have been done away with-in fact, it is difficult to conceive of a more completely enclosed and compact power plant. The dimensions of the motor are 31/8 x 51/4 inches, though the mere figures scarcely are any indication of the power it is capable of generating. As for the rest of the chassis in which the engine is exhibited, it differs scarcely at all from the standard Premier chassis, in which there has been found very little room for improvement. There are other Premier cars on exhibition, of course, a touring car and a fast-looking roadster, but neither has the power to distract the attention of those who see the Weidely motor first.

#### Buick Parts from Past Practice.

All the rest of the new "sixes," with the exception of the Buick-Hudson, Chandler, Marion, Abbott-Detroit, Pathfinder, Pullman and Marmon-have their cylinders cast in blocks of three; the Buick has three blocks of two. Incidentally, the Buick is the only one of the lot that has overhead valves, the explanation being scarcely necessary for, as nearly every one knows, all Buicks always have overhead valve motors. This particular Buick, of course, is quite different from any of the others, for has it not six cylinders? And have not all other Buicks had four cylinders? But even leaving the motor aside, the new Buick "six" is not even a little bit like any other Buick, for it has a brand new type of body that will support the adjective "streamline" a great deal better than will a great many others. Another point of difference between the present variety of Buick cars-all of them-and their predecessors is that they are driven from the left side with the gear shift control in the center. At the same time, they are all of them, every last one, fitted with Delco electric lighting and engine starting equipment. The Buick "six" cylinders, by the way, measure 334 x 5 inches. The wheelbase is 130 inches and the drive is through a three-speed selective gearset to floating rear axle.

#### Hudson "Six" Abounds in Features.

Being among the really low-priced "sixes" that within the year have come into such prominence, it is but natural that the new Hudson—it sells for but \$1.750—should create somewhat of a furore at the Hudson exhibit and more or less monopolize the attention of those who stop to look-see what's new. In its material aspects, the new car is so much like its larger brother that more than a superficial glance is needed to distinguish between them. Also, throughout the construction Hudson features are plentiful. The motor, like a good

many of the other new "sixes," has its cylinders in threes, the bore and stroke being 3½ inches and 5 inches, respectively. Like the larger Hudson, the new model has an improved noiseless disk clutch with cork inserts incorporated in the disks by way of ensuring "sweetness" of action. A three-speed selective gearset and tapered propeller shaft help transmit the power to the rear wheels, which are carried on a full-floating rear axle which, though amply strong to sustain the load put upon it. nevertheless is exceptionally light.

One interesting feature of construction is that the driving gears and the differential mechanism are mounted as a unit which is bolted to the axle and can be easily removed without the necessity for disturbing other parts. Indidentally, the construction of this unit is such that liberal adjustment is possible and the operation is quite simple. As is the case with so many more of the newer cars, the gasolene tank is stowed in the deep skuttle, though it is different from others in that it is fitted with a swash plate to prevent leakage resulting from the surge of the fuel on other than smooth roads.

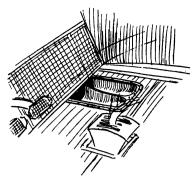
Another of the distinctive features of the car that will bear inspection are the cleverly domed mudguards. The larger "six" is there, of course, and among its more important improvements it is noticeable that the steering gear has been shifted to the left side, the wheelbase has been lengthened and the size of the tires increased; like its smaller brother, it now has its gasolene tank in the cowl.

#### Chandler Makes Its Formal Bow.

The Chandler is another new "six" that makes its first appearance at a formal gathering, though it has been on the roads for some time and has quite amply fulfilled the promise of its designers. As already has been made plain, it belongs in the class of cars that have their cylinders cast in blocks of three, the bore and stroke in this case being 33/4 x 5 inches-another of the more than ordinarily popular sizes. In external appearance, the Chandler is quite different from any of the other cars; it is different in a way that really is different, for its hood and radiator have a sort of squat appearance that, far from being displeasing. is a welcome deviation from the usual "squareness" that is so prevailing. Incidentally, though the body undoubtedly is a straight line creation-judging from the straightness of the top of the tonneau and the engine hood-the effect is materially softened by the curves at the lower door panels and at the skuttle.

Throughout the Chandler great care has been taken to ensure operation at the least possible expense and, as nearly everyone knows, this means, primarily, light weight.

#### MOTOR WORLD



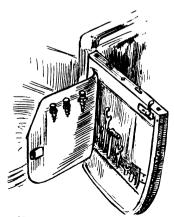
MARION HEEL RESTS

and, secondarily, the reduction of friction to the minimum and the provision of means for keeping out every particle of foreign matter. In these respects, it is pointed out, that though the car is a full-sized one with a wheelbase measuring 120 inches and carried on 34 x 4-inch tires, the weight is but 2,985 pounds, fully equipped, including lighting and starting apparatus and battery, top, windshield, speedometer, and extra rims; as regards the keeping out of foreign matter, the construction of the engine crankcase is sufficient to make plain to what lengths the designers have gone.

#### Other Differences of the Chandler.

Instead of ending where crankcases usually end, the Chandler is carried out to the side frame members, so that the motor is virtually made mud-proof. Chandler engineers have worked out a neat method of hanging the torque arm that is a little different from any of the others. The method is best made plain with the aid of the accompanying illustration, which shows that there is mighty little chance for rattles to develop.

Abbott-Detroit, Pullman, Marion and Pathfinder are four more of the new "sixes" that have their cylinders in threes, though the construction of the three is not a little bit alike. The Abbott-Detroit, for instance, measures 4½ x 5½—the largest of the three

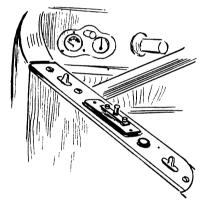


ABBOTT TOOL COMPARTMENT

—and amongst its distinctive features includes an intake manifold that is heated by the exhaust gases, part of which are turned into it; and this is in addition to a hotwater-heated carburetter. Not much chance for failure of proper carburetion there. But this is not the only distinctive feature of the new Abbott-Detroit.

#### Steering Wheel that Blows Horn,

For instance, any one who grasps the steering wheel is likely to receive a bit of a shock, but it will be a shock to his nervous system; for inserted at regular intervals about the top of the rim there are movable fiber sections which, when pressed, make the necessary connection to cause the electric signal to blare. Another clever feature is the combination of starter control and gear shift lever in one. Depressing a latch permits the lever to be put in the position for starting the motor; thus it is not possible to start the engine with the gears in mesh.



ABBOTT DIMMER SWITCH

Among the other control devices, there is a switch atop the left door, within easy reach of the driver, which dims the head lamps instantly it is pressed-a little convenience that is sure to be appreciated. Again, the accelerator pedal is not a plain one, but has inserted in it a tiny roller which permits the operator's foot to move on the roller instead of on the floor. Still another feature is the location of the tools in a compartment within one of the tonneau doors, the arrangement being best made plain with the aid of the accompanying illustration: the compartment has a lock on it. The car that incorporates all these features is cleverly upholstered in Bedford cloth and this, too, is to be standard equipment hereafter. Not the least of its advantages is that it does away with the necessity for slip covers and permits upholstery in a much wider range of colors than does leather.

The Marion "six" being the first Marion "six" quite naturally attracts its full meas-

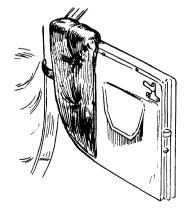


ABBOTT WHEEL HORN SWITCH

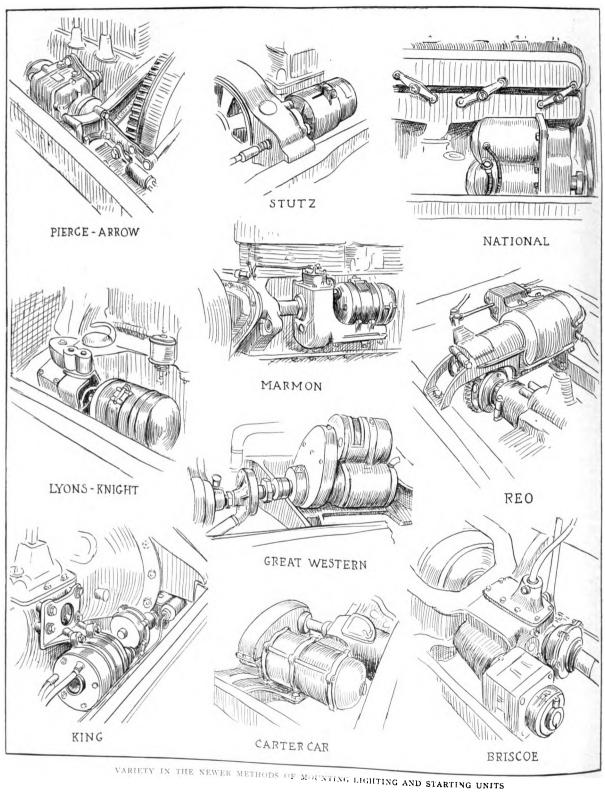
ure of attention, and it is attention that is merited. The motor has a bore and stroke of 31/4 x 51/4 inches and develops at about 1,500 revolutions a minute, approximately 48 horsepower. The principal elements in the new car include a dry plate clutch which is enclosed in an extension of the crankcase and is thoroughly dust-proof and a threespeed selective gearset which is mounted integral with the rear axle. The rear axle is of the full-floating flange-driven type, and the wheelbase is 124 inches. The wiring on all the Marion cars is worthy of note, for there is not the slightest chance of any of it getting broken or chafing; it is all protected by metallic conduit and leads to a central junction-box where troubles can be quickly traced to their source. The

#### Showing How Vulcan Gearshift Works.

The Pullman "six" that is such an able exponent of the streamline principle of body building bears the distinction of being one of the two makes of cars at the show that is equipped with the Vulcan electric gearshift, and by the number of persons who daily crowd about the car it is evident that not many will leave without seeing this exceedingly simple and exceedingly positive method of shifting gears. For those who are intrepid enough to brave the stares of those who prefer to look on, the sales man in attendance has a ready hand and the door to the driver's compartment is a wide



VELIE DOOR UPHOLSTERY



#### MOTOR WORLD



STUDEBAKER REAR COMPARTMENT

one. Consequently, if the apparatus were easily worn out, it probably would not last the week, for there is no estimating the number of persons who have first pressed buttons and then pressed the clutch pedal and listened expectantly for the click that indicates the gears have engaged. In other respects, too, the Pullman "six" is interesting; its radiator appears slightly narrower than the orthodox type of cooler, or perhaps it is only that the engine hood slopes more sharply and has a little more flare to it than have most of the others. At any rate, there is no mistaking the entering wedge principle that has been built into the car. The cylinders of the motor measure 334 x 51/4 inches, and the principal transmission elements include a multiple disk clutch and four-speed gearset, which are mounted in a unit with the motor. This car, by the way, is one of the very few at the show which is listed with wire wheels as standard equipment, with one spare wheel thrown in for good measure. Quite a number of other cars appear equipped with wire wheels, but in nearly every case their specification increases the list price of the car.

#### Cantilever Spring Pathfinder Feature.

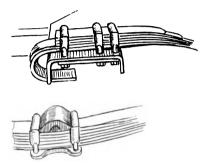
Although it was fairly well known that the Pathfinder people were about to uncover a new light "six" at the show, the fact having been forecast in Motor World's Before Shows Issue, the exhibit nevertheless held something in the nature of a surprise in that it makes known for the first time that in the new "six" cantilever rear springs have been adopted. The construction, however, is different from that used in the King, and the National, and the Willys-Knight, as the accompanying pictures make plain. Instead of sliding on the rear axle, as is the case with the Willys-Knight, or being rigidly attached as is the case with the National and the King, the Pathfinder spring is swiveled to the frame and is shackled both to the rear axle and the frame at the forward end.

The motor in the new model has its cylinders in threes and the bore and stroke / are 31/4 x 51/4 inches, respectively. Incidently, a big berline limousine, with the

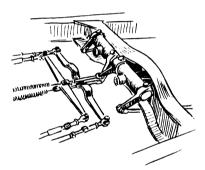
new light "six" chassis for a base, never fails to attract attention quite as much for the luxury of its fittings and finishing as for its carefully blended colors. The body is done in Amaranth red with the running gear black and the whole set off with a fine line of ivory white striping. Of course, the cruiser is there, and beside it there is a "nifty" corn yellow five-passenger touring car on the new "light six" chassis.

#### Little Brother to the Marmon "Six."

The coupling of the name Marmon and the word "six" is very likely to bring to



EMPIRE SPRING CONSTRUCTION



SPEEDWELL BRAKE EQUALIZERS

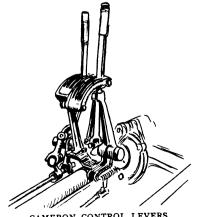
mind the beautiful creation that last year saw its first show light, but once glimpse of the Marmon stand in the Palace is sufficient to make plain that not only is the original "six" in place, but there is another as well-a smaller model, about which comparatively little information was permitted to become public property until after the doors of the show were thrown open. The motor, as already has been explained, has its cylinders cast in two blocks of three, the bore and stroke measuring 41/4 x 51/2 inches as against 41/2 x 6 inches for the larger "six"; the new model, therefore, is a "light six." The crankcase of the motorit is really too bad it cannot be seen as clearly as it should be seen to bring out its fine points-is a wonderful piece of work; it is cylindrical in shape with a second cylindrical tunnel for the camshaft and the timing gear case and arms cast integral. Needless to add, the Marmon oiling system, which has been such a prominent feature

of previous Marmon engines, is retained intact, and that those who so desire may view its working there is a model-handoperated-that forms a conspicuous part of the exhibit. Incidentally, the crankshaft has seven bearings. The clutch is an adjustable asbestos fabric faced cone with "pick-up" springs under the face to ensure gradual engagement.

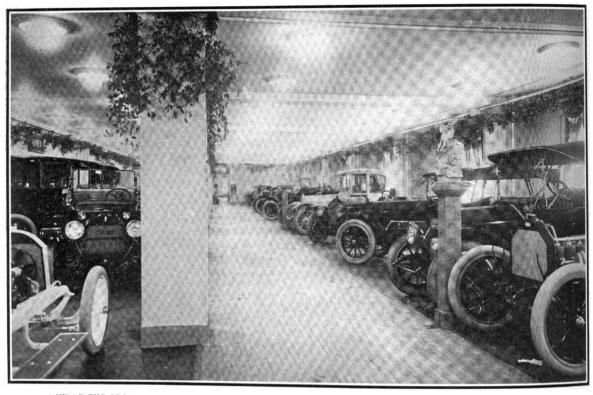
From the clutch, the power is transmitted through a three-speed selective gearset which is mounted on three points in the waist of the chassis. Between the clutch and the gearset there is one universal with two more between the gearset and the rear axle, which is of the distinctive Marmon full-floating type. The wheelbase is 132 inches, and it goes almost without saying that the controls are placed so as to facilitate driving from the left side. Springs are of the conventional pattern, semi-elliptic front and three-quarter elliptic rear, and as they are self-lubricating no grease cups are provided. The equipment, of course, is complete, and no small part of it is carried in the commodious running board boxes that serve as one of the Marmon distinguishing marks. Speedster, two-passenger roadster, four- and five-passenger touring models all list at the same price-\$3,250.

#### Saxon Space Magnet for Throng.

Among the new four-cylinder cars that are full grown, so to speak, and cannot be classed with cyclecars, probably none-at least, none of the very low-priced ones-attracts anywhere near as much attention as does the Saxon, which came to the show practically unheralded but will be very much heralded when it goes away. There is scarcely a minute of the day or the night when the space all around the little car is not literally jammed with those who would view and feel what is virtually the lowestpriced four-cylinder automobile of standard size in the show. Nor is the low price of the car the only magnet that serves to draw, for it is good to look upon and com-



CAMERON CONTROL LEVERS



ONE OF THE BROAD AISLES ON THE SECOND FLOOR WITH CASE AND NATIONAL EXHIBITS ON EITHER SIDE

fortable to step into, and most any one with as little as \$395 can imagine himself or herself—and quite a few of the onlookers are of the fair sex—spinning along the boulevard behind its wheel. Three hundred and ninety-five dollars requires slightly less stretch of the imagination than does even a little bit more.

As for the car itself: It is an uncommonly good-looking roadster with deep cushions, left drive with center control and one of the neatest of neat block-cast motors imaginable. The whole thing looks almost small enough to fit into a capacious overcoat pocket, and it is good-looking enough for someone to want to "swipe." The four cylinders are cast in a block, quite as a matter of course, and the casting is extended downward to form, also, the crankcase that must house the busily-moving little crankshaft and connecting rods. Across the tops of the pistons the measurement is 25% inches and their stroke is 4 inches; valves are all located on the one side and they are adjustable. The clutch is a dry-plate threedisk type faced with asbestos material, and the gearset, which is progressively controlled, provides two forward speeds and one reverse. The front axle is a substantial drop-forging and the rear axle is of the semi-floating type contained in a pressed steel housing and having the outer ends of the axles mounted in Hyatt roller bearings.

Making plain that the car is not such a little one after all—there is ample room for two moderately large persons in the seat—the wheelbase measurement is 96 inches and, of course, the tread is standard. Wire wheels are regular equipment and the domed mudguards fit them snugly. And, last but not least, the equipment is complete and includes a top, windshield, gas head lamps with generator, oil tail lamp and bulb horn—all for \$395!

#### Attractive Cars for Slender Purses.

Next higher in the price scale-still leaving the cyclecars one side for the time being-there is a brand new Metz roadster that looks as if it could do a fast turn. The new car is an addition to the Metz line, though the chassis scarcely differs at all from previous Metz practice. The wheels, however, are wire and there is not much more to the body than is necessary to hold the two passengers in their places. Taking a leaf out of some one else's book, Metz engineers have mounted their lamps atop the front fenders, thus cutting down weight, tor only one pair is needed, and lending a touch of attractiveness. The price of the car is \$500.

Just a little bit further up the price scale, there is another car that is brand new all the way through and that in the single form in which it is shown gives evidence of careful design and workmanship. It is the Vulcan, and it makes its first appearance. There is a chassis on view and there is a completed roadster, and the manner in which spectators move from one to the other and eventually gravitate back to the chassis speaks well for the construction. The method of supporting the rear end of the unit power plant, for instance, is interesting. A very broad cross frame member virtually forms a partition in the gearcase, three-fourths of which is on one side-the engine side-and one-fourth is on the other side. Inside the gearcase there are the gears, of course, and the clutch, which is of the leather-faced cone variety, and the housing that encloses both is rigidly bolted to the crankcase extension which encloses the flywheel. The gearset provides three forward speeds with selective control, and the drive is through semi-floating rear axles. The motor, by the way, is a block-casting of the L-head type with cylinders measuring 33% x 5 inches. Although only the roadster model is exhibited—it lists at \$750-2 touring model, listing at \$100 more, also is produced.

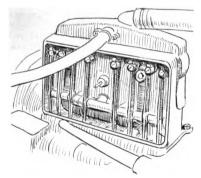
Still higher in the price scale—though still under the \$1.000 mark—the single Briscoe model is easily the most popular of all the cars that are in its class; it sells for \$900 flat. In its lines and its fittings, the car is almost typically foreign, which is but

#### MOTOR WORLD

natural, inasmuch as it was designed abroad though it is to be built in America. The motor is a block casting with all the valves on the one side, after the modern manner, the exhaust manifold is finned to assist in the rediation of heat. The cylinders measure 35/16 x 5½ inches. The wheelbase is 105 inches.

#### Single "Eye" in Briscoe Model.

Externally, the car is unlike anything else at the show, the principal point of difference being due to the use of a single headlamp set into the top of the radiator after the manner first exhibited last year on the Garford car. It has been said that clothes don't make the man, and it follows that paint does not make the car, but the finish of the Briscoe model goes far to prove that the paint can have a whole lot to do with it. The body work is finished in a shade of yellow and the internal trimmings, what there are of them, are in a dark shade of red. In the mechanical construction of the car, one of the interesting little "wrinkles" is the clever manner in which the electric

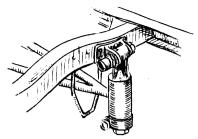


CAMERON VALVE MECHANISM

starter has been incorporated with the gearset, the drive being through gearing on the clutch shaft. The arrangement is shown by the accompanying illustration. The car is fitted with wire wheels, which are to be standard equipment.

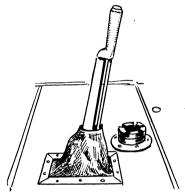
Presenting, as it does, fewer difficulties than is the case where six cylinders have to be accounted for, it follows as a matter of course that the block-casting of four-cylinder motors is even more common practice than is the block-casting of "sixes." Practically without exception, all of the new "fours" are so built, and among them the Partin-Palmer motor presents a number of features that are all its own and that are new to motor construction.

The motor in the first place is of the overhead valve type, and in addition to this feature, which of itself is enough to distinguish it, the cylinder head is detachable, thus providing a simple and easy means of getting at the combustion chambers to clear away the carbon that is sure to form sooner



SPEEDWELL TORQUE HANGER

or later in almost any motor. Although it is not an altogether easy matter to enclose overhead valve mechanism, it has been done in the Partin-Palmer with the aid of a neat aluminum housing that keeps the lubricant in and the dirt out. Except for the motor, the car does not differ very greatly from the conventional and standardized product, power being transmitted through a cone

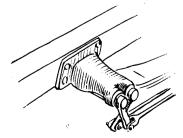


HAYNES BOOTED LEVER

clutch and three-speed selective gearset. The rear axle is of the full-floating type and the wheelbase is 115 inches. The price of the car is \$975.

#### Differences that Mark the Cameron.

The Cameron is another car that has a motor that is distinctively all its own and is quite different from anything else of its kind. Although the valves, strictly speaking, are of the overhead type, they do not stand vertically over the cylinders in the usual manner. Instead they are horizontal and are all operated from the one side by means of long, vertical push rods which receive their motion from a common cam-



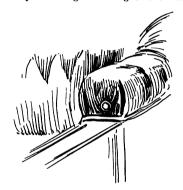
MAXWELL SPRING HANGER

shaft; the arrangement is best made plain with the aid of the accompanying illustration. The motor, by the way, is cooled by water, and is the first departure of the Cameron company from its previous air-cooled practice.

#### Three New Detachable Head "Fours."

Another distinctive feature of the Cameron car is its rather unique transmission system, which provides four speeds forward yet each drive is a direct drive. The seeming mystery is solved by examination of the chassis, which reveals that the gearset, which is mounted on the rear axle, lies parallel to it instead of parallel to the propeller shaft, as is usual. For the forward speeds there is one quadrant and one lever, and for reverse there is a separate quadrant and another lever, which serves also, operating in another slot, for the emergency brake.

Among the newer four-cylinder motors, the Allen presents an unusually clean appearance—an effect that has been brought about by the integral casting of the intake



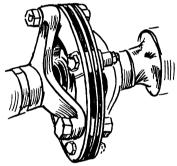
IMPERIAL HORN BUTTON

manifold that is finned to assist in heat radiation. Following the general practice, motor and clutch and gearset are incorporated in a rigid unit and the whole is supported at three points in the chassis frame. There is little or nothing that is at all out of the ordinary in the Allen chassis, the designers evidently having preferred to stick to standard practice. Behind the motor there is a multiple disk clutch and a three-speed selectively operated gearset, the frame being mounted front and rear, after the usual semi-elliptic, three-quarter elliptic manner.

Of the four remaining four-cylinder models that are entitled to be classed with the rest of the new products—the Moline-Knight, the Lozier, the Lyons-Knight, and the Willys-Knight—all but, one—namely, the Moline-Knight—have detachable cylinder heads, the same being a common feature with Knight engines. But the Moline-Knight engine, which only just has completed its record-breaking two-weeks night-

1

and-day non-stop run, is an uncommon Knight motor, whose most prominent features already have been outlined in the Before Shows Issue of Motor World. As it is exhibited, alongside a completed car, the Moline-Knight engine will fulfill every one of the promises made for it regarding its compactness, its cleanliness of design and its general difference from every other Knight engine that is made. If the blockcasting of its cylinders, together with the formation of intake and exhaust and water passages in the casting is not enough to make more than one person look again. mention of the fact that cooling is carried on by thermo-siphonic action ought to do so. And if that is not enough, the price of the complete car-\$2,400-certainly ought to be enough. The Lyons-Knight motor is of the conventional Knight type, though the car that carries it is new all the way through and is the first product of the makers of the engine. Strangely enough, the only worm

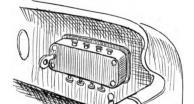


WILLYS-KNIGHT LEATHER JOINT

driven cars at the show are Knight-engined models, both the Lyons-Knight and the Willys-Knight being so constructed. In the case of the former there is an ingenious hydraulic shock-absorber mounted between the top of the worm casing and the frame. Lyons-Knight cars are driven from the left side and the driver is not likely to have his vision obstructed by the beading on top of the windshield, for the good and sufficient reason that there is none. As a matter of fact, only two cars in the show have windshields of the type in which the usual binding at the top is missing, one being the Lyons-Knight and the other the Willys-Knight.

#### Leather Universal for Willys-Knight.

Since last it made its appearance, the Willys-Knight, which then was known as the Edwards-Knight, has undergone no little refinement, not the least important feature of which embraces the adoption of a leather universal joint between the clutch and the gearset. At the same time, Salisbury axles, both front and rear, have been substituted for the Timkens that hereto-

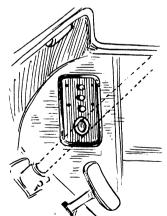


IMPERIAL LOCKING SWITCH

fore did duty, and a Stromberg carburetter takes the place of the S. U, used in the past. Needless to add, the U. S. L. electric lighting and engine starting system that always has been a feature of the cars is continued, though the newer form now is used, as a matter of course.

#### Lozier "Four" Model of Compactness.

The Lozier "four," which makes its first appearance, is a poppet valve motor, of course, for all Lozier motors have been of that type. But it is an unusually attractive poppet valve model which has a number of distinctive features all its own. This motor, too, exemplifies the modern tendency toward detachable cylinder heads and, as a matter of course, the cylinders are cast in a block. One of the interesting features of this motor is the clever manner in which everything has been built into place. Even the tire pump, which is driven from the straight-through magneto and pumpshaft, has its own proper base and becomes a veritable part of the motor. In the disposition of the electric lighting and engine starting apparatus practice that steadily is becoming more prominent is followed, both units being mounted with the gearset, where they are at once out of the way and yet easily accessible. The type of tire holder that has been adopted is ingenious and is so arranged that the spare rim and tire are securely held in place by one movement

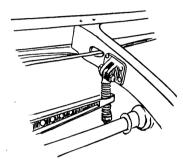


CARTERCAR FUSED SWITCH

of a single lever which, on occasion, can be locked in place.

Among the makers who have added new bodies on chassis which can hardly be called old, though they are not brand new. the Stearns company has brought out two new body styles that never fail to elicit unbounded admiration. There are two of these new Stearns-Knight models-one of four-passenger capacity and the other with seats for six-and the manner in which the upholstery has been treated is quite new throughout. Instead of being tufted in the usual manner, the leather is divided into fairly large squares by broad bands of leather laid crosswise and lengthwise and between the rear seats there are substantial roll partitions which suggest the acme of comfort.

The Krit company, too, has a new model which it styles the "special" touring model, the principal difference between it and the others being that it is more completely equipped and is mounted on wire wheels



CHANDLER TORQUE HANGER

with one spare wheel as extra equipment. In addition to the usual features, the car carries a Golde "one-man" top, seat covers with patent leather arm rests, and electric lighting and engine starting system. When so equipped, the price of the car is \$100 more than the standard model—\$1,050 without the electric starter and \$1,150 with it.

#### Clever Design "Wrinkles" in Older Models.

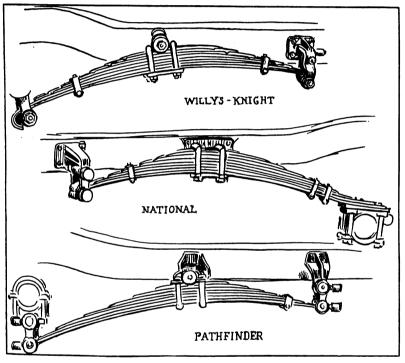
In addition to all the various makes that already have been mentioned, it goes without saying that the older and well-known brands that go on from year to year with scarcely a change worthy of more than passing note are at the show in full force. The Pope-Hartford, for instance, for the first time in years are unrepresented by a six-cylinder model, though the loss scarcely will be felt, in view of the new "four" that just has been brought through and placed on exhibition for the first time—a four that sells, completely equipped, for the modest sum of \$2,250, despite its generous wheelbase, its electric lighting and engine starting system and the Pope quality.

At the Winton stand first glimpse is given

of the new Kellogg pump equipment that hereafter is to be used in the well-known Winton pneumatic engine starting system that has been used for so long. The pump is mounted at the forward end of the engine and its four little cylinder heads are cooled by water from the cooling system.

Kissel cars have not changed a great deal since last they were exhibited, and in the six-cylinder chassis that is on view there is revealed a clever torque arm mounting that is not quite like anything else of its kind. The Kissel people also have adopted a rest for the foot that operates the accelerator pedal that ought to be hailed with delight by those who drive, and the same can be said for a lot of others, including the Mitchell,

engine, as already is fairly well known, relies for operation upon reciprocating crescent-shaped valves. Also, there are to be two sizes of the motor built, the larger having cylinders measuring 4 x 55% inches and the smaller 33% x 43% inches; both of them are "sixes." The chassis, in which the motors are practically identical except for a difference in the size of the parts and incorporate the usual Palmer-Singer multiple disk clutch and four-speed selective gearset with direct drive on fourth speed. In contradistinction to previous Palmer-Singer cars, however, the Fischer motor models are driven from the left side and controlled from the center. The smaller model is to sell for \$3,250 and the larger for \$3,500.



DIVERSITY IN CANTILEVER SPRING CONSTRUCTION

in which a new form of petcock has been adopted. Instead of having little handles which are turned one way or t'other, the Mitchell engine is fitted with screw devices topped with fiber heads which cannot get hot. To open the petcocks, the heads are turned to the left, and as there is a large, funnel-like opening, it should be no trouble at all to prime the cylinders. Incidentally, the Mitchell gearset-located engine starting unit is worth a look-see.

#### Fischer Crescent Valve Model Attracts.

The Speedwell rotary valve motor is there, of course, for hereafter there will be no more Speedwell poppet valve engines, but the one type coming from the Dayton plant. And not far from it there is the new Palmer-Singer Fischer-engined car. The

Overland is another name that is well known and that is well represented at the show, though except for a slight alteration in the size of the single model that hereafter will be produced there is not a great deal that is new. The method of attaching and driving the electric lighting and engine starting system is original and quite effective, chains to the crankshaft being used and the two units being mounted one over the other and hung to the crankcase.

As already has been remarked, the Haynes and the Pullman are the only cars at the show that are not fitted with the orthodox type of hand gear lever, both being equipped with Vulcan electric gearshift. There is one other exception, though the exhibit is not, strictly speaking, a car exhibit. It is the exhibit staged by R. M.

Owen & Co. and uncovering a brand new type of electric transmission, which is dealt with in detail on another page. But to get back to the Vulcan shift: In the Haynes arrangement there is a neat plug—you can hardly call it anything else—in the center of the footboard and filling the hole through which the emergency gear shift lever can be inserted. The plug is unscrewed and the lever inserted, in case it should be necessary. Another clever idea is the jacketing of the lower end of the emergency brake lever with a leather boot.

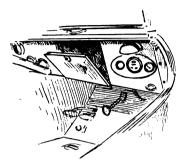
#### Wealth of New Distinctive Features.

In practically every one of the cars on exhibition there is at least one feature that is worthy of more than passing attention. In the Mercer, for instance, there is a commodious locker between the wide front seats, and also there is a transmission brake which is the only one of its kind at the show: the Herreshoff has an unusual starter mounting, the electric motor being virtually incorporated with the gearset; one of the Havers models appears with slip covers of a novel type in which the fronts are celluloid, over the lamps; the Franklin, being the only air-cooled car at the show, must prove of more than usual interest for, barring this fact, a number of important improvements, given in detail in the Before Shows Issue, have been made; the Empire, which is a bigger and better car than ever before, has a new frame gusset plate and the rear springs have their under leaves turned back to act as buffers in conjunction with rubber pads; incidentally, a new Empire model to sell for \$1,025, with an electric starter, soon is to appear.

Barring their handsome appearance, the Case trio offer as one of their most attractive features the extensive equipment list they carry, for in addition to the usual fittings and accessories, there is also a spare tire and tube mounted on a spare demountable rim: only one important change has been made in the White line, and that concerns the motor in the larger "four," which has been increased in size from 41/4 x 53/4 to 41/4 x 63/8 inches; as usual, the feature upon which Cole engineers lay most stress is the careful manner in which every last part of Cole cars has been standardized; the Reo has an ingenious starting motor mounting in which the motor is placed transversely to the propeller shaft; the Regals are chiefly distinguished by their underslung construction and they are, barring one of the cyclecars, the only cars in the show that are so built; the big Oldsmobiles retain their ingenious running board lockers, and motors have been rendered more sightly and more durable by enamel; the Maxwell has a new type of combined brake rod and spring hanger that gives evidence of



the tendency toward making one part perform the functions of many; the little Hupmobile, which is not as little as it once was, is another that has an ingenious engine starter mounting. And so it goes, all the way through the list-few indeed are the cars that do not reveal anywhere from one to a dozen features which have been developed during the year gone by.

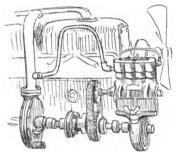


OAKLAND DASH LOCKER

Among the five little vehicles that make up the cyclecar class at the show-Trumbull, Twombly, Imp, La Vigne and Carnation-only one of them, the Imp, is fitted with a motorcycle type motor with twin cylinders set V-fashion and cooled by air. All of the other four have four-cylinder motors cooled by water and of them the Twombly is in a class by itself. Instead of being of the conventional poppet-valve type, the Twombly has piston valves and is fitted with an engine starter operated by pulling a cable. The La Vigne motor is air-cooled.

#### How Transmission Systems Differ.

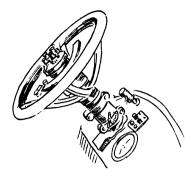
Similarly, there is not much similarity in transmission methods, both the Trum-



WINTON PUMP INSTALLATION

bull and the Twombly having friction systems. The Twombly system, however, like the Twombly motor, is in a class by itself, as the accompanying illustration makes plain. Instead of a plain driving friction member, this plate has three steps upon it, the idea being to confine the operator to the use of exactly three speeds; at the same time, on the countershaft from which

#### MOTOR WORLD



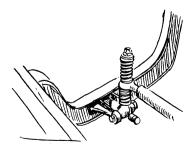
PULLMAN VULCAN CONTROL

the drive to the rear axle is transmitted by a long chain, there is a neat planetary gear which, when in use, gives a reduction of 50 per cent. A hand lever throws the gear out of use by clutching the housing to the shaft, there being, therefore, six forward speeds. In the Trumbull arrangement, the driven wheel can be moved a fraction of an inch, if necessary, thus providing practically an unlimited number of speeds.

#### Various Treads and Wheelbases.

Practically the same arrangement is used in the Imp cyclecar, though back of the change-speed mechanism the arrangement is entirely different. Instead of the two side chains that are used in the Trumbull or the single chain in the Twombly, the Imp has long, V-shape leather belts that run over pulleys. In the Carnation, the practice more nearly approaches the standard set by full-sized automobiles, there being a multiple disk clutch, a three-speed selective gearset and a shaft drive to the orthodox type of bevel gears in a live rear axle. The La Vigne, too, is almost a miniature automobile with disk clutch, gearset and shaft.

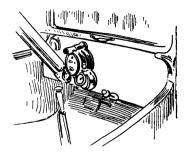
Wheelbases and treads vary greatly and there is considerable variety in seating arrangements. In the Trumbull the wheelbase and tread are 80 and 44 inches, respectively, as against 100 inches and 36 inches in the Imp, 100 inches and 38 inches in the Twombly, and 104 inches and 48 inches in the Carnation. In the Carnation and the Twombly and the La Vigne the seats are side by side, but in the others they are tandem fashion. A larger Carnation seats four



KISSEL TORQUE ROD HANGER

passengers. In price, too, there is quite as much variety, the Twombly listing at \$395, the Imp at \$375, the Carnation at \$495, the American at \$425, and the La Vigne at \$425.

Despite differences of opinion as to their enduring utility, the cyclecars always were the centers of curious or obviously interested observers-to say nothing of the light

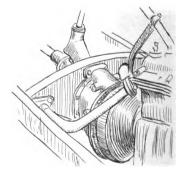


STUDEBAKER INSTRUMENT GROUP

machines of the true miniature car type, such as the Saxon and the Briscoe. Even when the crowds were "thin" there were knots around the midgets.

#### Where the Electrics Hold Forth.

It is just a little queer how the popular conception of things becomes twisted, in a way, so that which is expected often is nothing like that which is seen. There's that eminent French designer, for instance -Paul Poiret. His "creations" have made people sit up-nay, they have made people stand up and "rubber." So when the Baker electric company announced that Paul Poiret had been busy designing car interiors for them, people immediately formed mental concepts of-well, not exactly automobiles with minaret things on them, or anything like that, but something as different



VULCAN ENGINE MOUNTING

from the ordinary run of car interiors as a minaret equipment, or whatever they call it, is different from the common or garden variety of drapery. Lots of people said 50 while looking at the Baker vehicles.

As a matter of fact, however, the distinguished foreigner has applied his art in a way that is entirely admirable. Not only

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are the interiors of his design-there are two of them-lacking, in sensational features, but they are quieter and less conspicuous than many that are considered decidedly plain. One of the Bakers, which is a double-drive brougham for four passengers, is upholstered in a dull green cloth that is said to be unmatchable in this part of the world, and the little pipings -- that's the technical term for those little cord-like edges-are of an unobtrusive brown, as are also the silk curtains and carpet. The exterior is finished in Brewster green with black hood and fenders. The windows are sashless and are raised and lowered mechanically. The other Poiret car is upholstered in beige broadcloth-feminine assistance necessary to explain the color-and trimmed with a dull shade that harmonizes perfectly with the cloth. The carpet and the curtains are green. The exterior of the car, which is a rear-drive brougham, is of emerald green up to the window line and above that a dull olive. The car with the green interior is the latest Baker model, having double control and final drive by Lanchester worm.

Down at the end of the line is the latest arrival in the electric pleasure car field—the Ward, which, be it said, is a good deal better looking than its pictures indicate. In addition to a complete car, there is a stripped chassis on view, showing the G. E. motor hung from cross frames and driving to the bevel gears through a short propeller shaft and universal joints. The body construction is notable, for one thing, for the front windows, which extend downward almost to the top line of the hood. The lamps are placed unusually high up, where they cer-

tainly cannot fail to be seen.-The car has a generous battery of 42 cells and is thoroughly well upholstered and equipped.

An attractiton at the Rauch & Lang exhibit is the worm and gear in a glass case running in oil, showing not only how smoothly it works, but how well it is lubricated. An entirely new model is exhibited—a town car to be driven by a chauffeur and having seats for four inside and the usual two outside. It has an unusually long wheelbase of 106 inches. An adjustable windshield extends to meet the overhanging roof, so that the chauffeur is protected from the elements to a considerable extent.

For showing what the inside of a car looks like, without the necessity for getting in, or even looking through the windows, the Waverley brougham with one side entirely removed is about as satisfactory an arrangement as could be imagined. While the car is, of course, a special exhibition affair, its arrangement is precisely that of some of the stock models; the three chairs at the rear, arranged with the middle one set well back so that each occupant has plenty of elbow room, and the fourth, in the right front corner, are upholstered in gray velour. The Etruscan gold exterior finish and the pearl handle of the steering lever, to say nothing of other finishing touches, make the display an uncommonly attractive one, supported as it is by two stock carsa Georgian brougham and one of the dual drive models.

The three cars shown by the Ohio Electric Car Co.—a five passenger double drive, a four-passenger rear drive and a light shopping car for four passengers—all are equipped with the Ohio magnetic control

and brakes. The light shopping car is a new model, though it differs from other Ohios only in detail. It is a light machine, with a short wheelbase of 86 inches to permit quick turns, and is built for the service indicated by its designation. The battery consists of 40 cells, 11 plates to a cell. Control is from the rear seat. All the Ohio cars have sashless windows, and the front window consists of a single large sheet of glass; the glass drops out of sight completely when lowered. Incidentally, the Ohio people are developing a rotary converter for electric vehicle charging that is expected to be more convenient and practical for the use of the private owner than anything else of its kind. It will be selfstarting in case of a night interruption of the current supply, and will be automatic in its operation throughout the charging process.

The Anderson company, which makes the Detroit electric, is showing four carsthree worm-driven and the fourth bevel gear driven. While all the Detroit cars have been reduced in price by \$300, one model in particular is appealing in the way of price, it having been built with an eye to cutting down the cost in non-essentials, leaving all the "quality" in the construction. This is a four-passenger brougham with rear drive. A Detroit feature, which applies to all models, is an electric brake which comes into action when the controller handle is brought back beyond the point where the current is cut off. The brake acts powerfully and quickly, though smoothly, and of course is supplemented by the foot brakes. Final drive is through bevel gears in the lowpriced model.

## Summary of the 78 Car Exhibitors in the Palace

Abbott Motor Co., Detroit Mich.—Four Abbott-Detroit cars: One each four-cylinder touring and limousine; one each six-cylinder touring and roadster.

Allen Motor Co., Fostoria, O.—Two fourcylinder Allen cars: One each touring car and roadster; one chassis.

American Cyclecar Co., Bridgeport, Conn.
—One four-cylinder Trumbull cyclecar.

American Voiturette Co., Detroit, Mich.— Two four-cylinder American cyclecars: One each roadster and four-passenger touring.

Apperson Bros. Automobile Co., Kokomo, Ind.—Three Apperson cars: One each four-cylinder touring and roadster; one six-cylinder touring car.

Auburn Automobile Co., Auburn, Ind— Two Auburn cars: One four- and one sixcylinder touring car. Briggs - Detroiter Co., Detroit. Mich.—
Three Detroiter cars: Two touring and one roadster; one chassis.

Briscoe Motor Co., New York City-One four-cylinder Briscoe touring car; one chassis.

Buick Motor Co., Flint, Mich.—Five Buick cars: Two each four-cylinder roadster and touring; one six-cylinder touring; one four-cylinder chassis.

Cadillac Motor Car Co., Detroit, Mich.—
Five four-cylinder Cadillac cars: One each
coupe, touring, sedan, limousine and roadster; one chassis.

Cameron Mfg. Co., New Haven. Conn.— Two four-cylinder Cameron cars: One each touring and sedan; one chassis.

Cartercar Co., Pontiac, Mich.—Four fourcylinder Cartercars: Two touring and one each roadster and coupe; one chassis. Case, J. I., T. M. Co., Racine, Wis.—Three four-cylinder Case touring cars; one chassis

Chalmers Motor Co., Detroit, Mich.—Four six-cylinder Chalmers cars: Three touring and one limousine; one chassis.

Chandler Motor aCr Co.. Cleveland, O.— Five six-cylinder Chandler cars; two touring and one each roadster, limousine and coupe; one chassis.

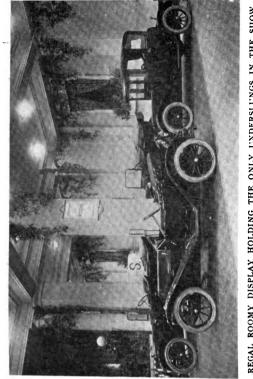
Cole Motor Car Co., Indianapolis, Ind.— Six Cole cars: One each four-cylinder touring and coupe and two roadsters; one each six-cylinder touring and berline limousine; one six-cylinder chassis.

Crescent Motor Co.. Cincinnati. O.—Two
Ohio cars: One cach four- and six-cylinder touring car; one six-cylinder chassis.
Davis Motor Car Co.. Geo. W. Richmond,
Ind.—Two six-cylinder Davis touring

cars.



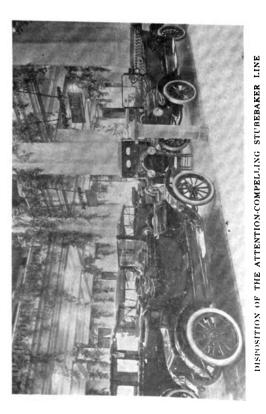
# FOUR OF THE MANY EXHIBITS THAT INCLUDE CARS OF WIDELY DIFFERING TYPES



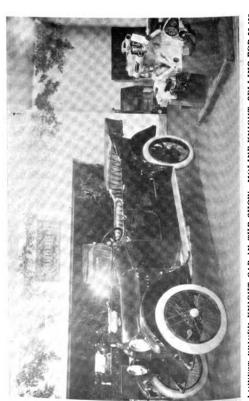
REGAL ROOMY DISPLAY HOLDING THE ONLY UNDERSLUNGS IN THE SHOW



WHERE KRIT CARS ARE DISPLAYED-SPECIAL MODEL IN FOREGROUND







LOWEST PRICED KNIGHT CAR IN THE SHOW-MOLINE-KNIGHT, SELLING FOR \$2,400

Empire Automobile Co., Indianapolis. Ind.

—Two four-cylinder Empire cars: One each touring and roadster; one chassis.

F. I. A. T., Poughkeepsie, N. Y.—Three Fiat cars: One each four-cylinder roadster and limousine and one six-cylinder touring; one six-cylinder chassis.

Franklin Mfg. Co., H. H., Syracuse, N. Y.— Four six-cylinder Franklin air-cooled cars: One each roadster, coupe, sedan and touring.

Garford Co., Elyria, O.—One four-cylinder Willys-Knight touring car; one chassis.

Great Western Automobile Co., Peru, Ind.

—One four-cylinder Great Western roadster with Carter engine; one four-cylinder poppet-valve engine chassis.

Havers Motor Car Co., Port Huron, Mich.

-Four six-cylinder Havers cars: Two
each roadster and touring.

Haynes Automobile Co., Kokomo, Ind.—Four Haynes cars: One each six-cylinder touring, roadster and limousine; one four-cylinder touring.

Henderson Motor Car Co., Indianapolis, Ind.—Two Henderson cars: One fourcylinder roadster and one six-cylinder touring car.

Herreshoff Motor Co., Detroit, Mich.—
Three Herreshoff cars: Two four-cylinder touring and one six-cylinder touring.
Hudson Motor Car Co., Detroit, Mich.—
Four six-cylinder Hudson cars: One each roadster, sedan, cabriolet and touring.

Hupp Motor Car Co., Detroit, Mich.—
Four Hupmobiles: Two touring and one
each roadster and coupe; one chassis.

Imperial Automobile Co., Jackson, Mich.—
Four Imperial cars: Two each four- and six-cylinder touring cars.

Jackson Automobile Co., Jackson, Mich.— Three Jackson cars: Two four- and one six-cylinder touring cars.

Jeffery Co., Thos. B., Kenosha, Wis.—Four Jeffery cars: One each four-cylinder sedan and touring and one each six-cylinder touring and roadster; one four-cylinder chassis.

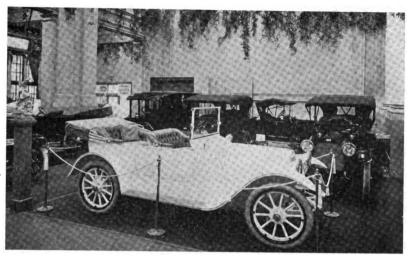
Keeton Motor Co., Detroit, Mich.—Two six-cylinder Keeton cars: One each touring and cabriolet. Two four-cylinder Carnation cyclecars.

King Motor Car Co.. Detroit, Mich.—Two four-cylinder King cars: One each touring and roadster; one chassis.

Kissel Motor Car Co., Hartford, Wis.— Four Kissel cars: One six-cylinder roadster and two touring; one four-cylinder touring; one six-cylinder chassis.

Kline Motor Car Corp., Richmond, Va.— Four Kline cars: One each four-cylinder touring and coupe and two six-cylinder touring.

Krit Motor Car Co. Detroit, Mich.—Three four-cylinder Krit cars: Two touring and one roadster; one chassis.



VELIE DISPLAY WHICH HOLDS ONE OF THE FEW WHITE CARS IN THE SHOW



MARMON EXHIBIT WITH NEW LIGHT "SIX" IN FOREGROUND



WHERE JACKSONS ARE DISPLAYED TO GO OD ADVANTAGE

- La Vigne Cyclecar Co., Detroit, Mich.— One four-cylinder air-cooled La Vigne cyclecar.
- Locomobile Co. of America, Bridgeport, Conn. — Three six-cylinder Locomobile cars: One each touring, limousine and double limousine; one chassis.
- Lozier Motor Co., Detroit, Mich.—Three Lozier cars: One each four-cylinder road-ster and touring car; one six-cylinder touring.
- Lyons-Atlas Co., Indiana polis, Ind.—Four four-cylinder Lyons-Knight cars: Two touring and one each sedan and limousine.
- McIntyre Co., W. H., Auburn, Ind.—One ix-cylinder McIntyre touring car and two two-cylinder air-cooled Imp cyclecars, one a delivery car.
- Marion Motor Car Co., Indianapolis, Ind.— Five Marion cars: One each four-cylinder touring and coupe and one each six-cylinder roadster, sedan and touring.
- Maxwell Motor Co., Detroit, Mich.—Four four-cylinder Maxwell cars: One each roadster and landaulet and two touring; one chassis.
- Mercer Automobile Co., Trenton, N. J.— Four four-cylinder Mercer cars: Two each roadster and touring and one limousine; one chassis.
- Metropole Motors Corp., Port Jefferson, N Y —One four-cylinder Metropole chassis.
- Metz Co., Waltham, Mass.—Two four-cylinder Metz roadsters.
- Mitchell Lewis Motor Co., Racine, Wis.— Two Mitchell cars: One each four- and six-cylinder touring cars; one six-cylinder chassis.
- Moline Automobile Co., Moline, Ill.—One four-cylinder Moline-Knight touring car.
  Moon Motor Car Co., St. Louis, Mo.—
  Three Moon cars: Two six-cylinder touring and one four-cylinder touring; one six-cylinder chassis.
- Motor Car Mfg. Co., Indianapolis, 1nd.— Four Pathfinder cars: Two four-cylinder roadsters and one each six-cylinder touring and sedan; one six-cylinder chassis.
- National Motor Vehicle Co., Indianapolis, Ind.—Four National cars: One each sixcylinder touring and coupe; one each four-cylinder roadster and touring.
- Nordyke & Marmon Co., Indianapolis, Ind.

  —Four Marmon cars: Two six-cylinder touring and one limousine and one four-cylinder touring.
- Oakland Motor Car Co.. Pontiac, Mich.— Seven Oakland cars: Two each six-cylinder roadster and touring and one each four-cylinder touring, sedan and cabriolet.
- Olds Motor Works, Lansing, Mich.—Three six-cylinder Oldsmobile touring cars.
- Packard Motor Car Co., Detroit, Mich .-

- Four six-cylinder Packard cars: Two touring and one each roadster and limousine; one chassis.
- Paige Detroit Motor Car Co., Detroit, Mich.

  —Five four-cylinder Paige-Detroit cars:
  Two each touring and roadster and one coupe.
- Palmer & Singer Mfg. Co., Long Island City, N. Y.—Two six-cylinder Palmer-Singer touring cars, one with Fischer motor and one with poppet-valve motor; one six-cylinder poppet valve chassis.
- Partin Mfg. Co., Chicago, Ill.—One fourcylinder Partin-Palmer touring car; one chassis.
- Peerless Motor Car Co.. Cleveland, O.—
  Four six-cylinder Peerless cars: Two
  touring and one each double limousine
  and sedan.
- Pierce-Arrow Motor Car Co., Buffalo, N. Y.—Three six-cylinder Pierce-Arrow cars: One each convertible coupe-road-ster, limousine and touring; one chassis.
- Pope Mfg. Co., Hartford, Conn.—Two fourcylinder Pope-Hartford cars: One each touring and coupe.
- Premier Motor Mfg. Co., Indianapolis, Ind.

  —Two six-cylinder Premier cars: One each roadster and touring car; one Weidely motor chassis.
- Pullman Motor Car Co., York, Pa.—Three Pullman cars: One each six-cylinder roadster and touring and one four-cylinder touring.
- Regal Motor Car Co., Detroit, Mich.—
  Four four-cylinder Regal cars: One each
  underslung roadster, touring and coupe
  and one overslung touring.
- Reo Motor Car Co., Lansing, Mich.—One four-cylinder Reo touring car; one chassis.
- Saxon Motor Co., Detroit, Mich.—One four-cylinder Saxon roadster.
- Speedwell Motor Car Co., Dayton, O.—One six-cylinder rotary valve Speedwell touring car; one chassis.
- Stearns Co., F. B., Cleveland, O.—Three Stearns-Knight cars: One each four-cylinder touring and limousine and one sixcylinder touring.
- Stevens-Duryea Co., Chicopee Falls, Mass.

   Three six-cylinder Stevens-Duryea cars: One each touring, limousine and double limousine.
- Studebaker Corp.. Detroit. Mich.—Five Studebaker cars: One each four-cylinder touring and cabriolet and one each sixcylinder cabriolet, touring and sedan.
- Stutz Motor Car Co., Indianapolis, Ind.—
  Three Stutz cars: One each four-cylinder roadster touring and one six-cylinder roadster; one six-cylinder chassis.
- Twombly Car Corp., New York City—One four-cylinder Twombly cyclecar; one chassis.
- Velie Motor Vehicle Co., Moline, Ill.-Four

- Velie cars: One four-cylinder roadster and two touring and one six-cylinder touring car.
- Vulcan Mfg. Co., Painesville, O.—One fourcylinder Vulcan roadster; one chassis.
- White Co., Cleveland, O.—Five White cars: Two four-cylinder touring and one coupe and one each six-cylinder touring and double limousine.
- Willys-Overland Co., Toledo, O.—Four four-cylinder Overland cars: Two roadsters, and one each touring and coupe; one chassis.
- Winton Motor Carriage Co., Cleveland, 0.

  —Three six-cylinder Winton cars: Two
  touring and one sedan.

#### Summary of Electric Cars.

- Baker Motor Vehicle Co., Cleveland, O.—
  Four Baker enclosed cars: One rear
  driven car with worm transmission, one
  double drive brougham with bevel gear
  drive, one special-finish front drive
  brougham and one coupe.
- Anderson Electric Car Co., Detroit, Mich.

  —Four Detroit electric cars: One fivepassenger duplex-drive brougham, two
  four-passenger rear drive broughams, and
  one two-passenger roadster.
- Ohio Electric Car Co., Toledo, O.—Three Ohio electric enclosed cars: One four-or five-passenger rear drive car, one fivepassenger double drive brougham and one four-passenger light shopping car.
- Rauch & Lang Carriage Co., Cleveland, O.

  —Three Rauch & Lang enclosed electrics: One six-passenger town car with outside drive, one 5-passenger double drive coach and one four-passenger brougham.
- The Waverley Co., Indianapolis, Ind.—
  Three Waverley enclosed electric cars:
  One Georgian brougham, one dual drive
  brougham and one car with side removed.
  Ward Motor Vehicle Co.. New York—One
  Ward four-passenger enclosed car and
  one chassis.

#### Fort Wayne Dealers Form Association.

The Fort Wayne Automobile Trade Association is the name which has been selected by the dealers and garagemen of Fort Wayne, Ind., for an association which is now in process of formation; its object is to stimulate trade, promote better feeling among the tradesmen, to act on objectionable legislation, to work for better roads and to do the multiplicity of other things which come within the scope of such a body's efforts. The permanent officers have not been chosen, but at a preliminary meeting the following temporary officers were selected: President, A. L. Randall; treasurer, Louis Ohnhaus; secretary, Lee Heller.

# Novelties and New Things in Accessories that Cropped Out



GOING UP-FROM THE THIRD TO THE FOURTH FLOOR, ON BOTH OF WHICH ACCESSORIES OVERFLOW

An unexpected "find" in the stand of the Westinghouse company, where a chassis is shown equipped with the Westinghouse air springs, is a motor of the rotary valve type. Perhaps the most curious thing about it is that it is still more or less in the tryingout stage, though there are several machines running and doing very well. The motor has six cylinders and the valve is mounted on the top, where it handles both the incoming gas and the exhaust. There is said to be no difficulty from heating, nor yet from lubrication. The lubricating oil is carried up through ducts to the interior of the long valve and through the valve and down the opposite end. Small holes at intervals lead the lubricant to the valve surfaces and keep it supplied with the proper amount of oil. It is probable that the motor will be ready for the market before very long, though there was no information available as to just when. One object of the construction is to secure quiet running, and that this has been accomplished, as far as mechanical noises are concerned, is clearly indicated when the starting motor is set spinning. There is not a sound from the engine except the rushing of air through the ports.

Another interesting little motor is at the Kemco stand, where it is fitted with one of the little Kemco generators. The motor is

a single casting—it has four cylinders—from top to bottom. The bottom is closed by a bolted-on plate and the ends are bolted on the crankcase. Even part of the gear housing is cast along with the rest of the motor, and the whole thing is clean and neat in the extreme. The engine is the product of the Massnick-Phipps Mfg. Co., of Detroit, Mich.

#### Making Electric Systems Fit Motors.

One of the worries that help to put gray hairs into the heads of the people who make electric lighters and starters is that there are a great many motors, all more or less different, and there is the possibility that there may be a call for lighting and starting equipment for any one of those motors at any time. To adapt an existing outfit to a motor often is a matter of no small difficulty and expense, amounting, perhaps, to the re-design of a good part of the system. The Electric Auto-Lite Co., of Toledo, O., has adopted an extremely ingenious way of literally stretching a motor to fit a job. If a little motor is to be equipped, the motor is made short; if a big motor, the motor is lengthened until it is big enough to handle

To cease taking liberties with the engineering department, let it be explained that

the Auto-Lite starting motor has been redesigned to the extent of substituting a laminated field for the former solid field. That is to say, the field, which forms the circular body of the motor, is built up of thin sheet iron stampings and the more of the stampings are used the longer the motor and, of course, the more power it is capable of exerting. Of course, the armature must be lengthened to correspond with the lengthened field, and this is easily done in the same way—that is to say, more laminations are added to the armature core and the shaft is made longer.

The Auto-Lite generator, for furnishing electric lighting current, is built on what are practically magneto dimensions, so that it can be installed in place of the magneto if desired, taking the place of the magneto for ignition work in addition to doing duty for lighting. As the current is of low voltage-6 volts-a coil for stepping it up to the requisite tension is mounted on the dashboard. Of course, if it is desired to retain the magneto the generator can be coupled to the magneto shaft, as it is designed to run at the same speed as the magneto. This brings out the rather curious fact that a generator for use with a sixcylinder motor is smaller than one for use with a "four," other things being equal.

The explanation is that the generator runs at the same speed as the magneto, which in a "four" runs at engine speed and in a "six" runs at 1½ times engine speed. The higher speed makes it possible to get the same result with a smaller dynamo. When the dynamo is used for ignition work it carries a timer.

A point that adds appreciably to the efficiency of the system is that the starting switch is placed very close to the motor and operated by rods instead of being placed high up and operated directly. The difference is in the fact that where the switch is at a distance from the motor the current has just that much further to travel, and there is a loss in making the circuit.

#### Westinghouse "Newness" in Profusion.

A brand new generator that will take care of both ignition and lighting duty is shown by the Westinghouse company, and it has a number of unusual features, not the least of which is the fact that the coil used for stepping up the current for ignition is practically part of the machine itself, being embedded in a solid mass of Bakelite which forms the cover for the distributer. Merely fastening the block in position with two brass milled-headed screws makes the connections, the screws being seated in metal contacts in the block. In case of trouble with the coil it is the simplest thing in the world to put a new one in place. Another advantage of the Westinghouse coil location is that there is much less high-tension wiring than when there is a coil mounted on the dash. Ignition timing is taken care of automatically by a centrifugal governor.

All the end castings for dynamo, motors, magnetos and so on in the Westinghouse line are made of an alloy that is a product of the Westinghouse laboratories and is said to be not only lighter than aluminum, but just three times as strong.

Among the innumerable little things that are in evidence in bewildering profusion at the Westinghouse stand are two types of fuse for electric lighting and starting circuits. One type is made with the fuse wire enclosed in a glass tube, so that a glance suffices to show whether the fuse has been "blown" or not. Another type is made with a fiber tube, but with a tiny white patch on the outside which becomes blackened or discolored when the fuse blows out.

#### Rushmore Demonstration Wins Attention.

The Rushmore exhibit includes a motor with a starting system installed and in working shape. The engine is run by compressed air, as, of course, gasolene in the Palace is taboo; but the starter does its work when the pedal is depressed, turning over the engine until it takes hold—on air. The way in which the pinion on the arma-

ture shaft automatically pokes itself out and meshes with the flywheel gear teeth when the starting switch is pressed is so interesting that the exhibit is always the center of a crowd that watches with fascinated eyes. A curious fact in connection with the Rushmore starting motors is that the first one built was so big that it was really too powerful for any except the biggest motors, so a smaller size was built on the same lines. Even this proving too big for many engines, a still smaller size has been brought out.

#### Ingenuity Displayed in National Sets.

A newcomer in the lighting and starting fleld is the National Coil Co., of Lansing, Mich, which has come to the front with a complete line of 6-volt lighting and ignition generators and starting motors. The twounit system is used, the generator and the starting motor being separate machines. The generator is designed to carry a heavy load at low speed, and is said to be canable of carrying the average lamp load at a road speed of about 10 miles an hour, though of course the gear ratios and wheel diameters make a good deal of difference in this matter. The generator has the outward shape of a magneto, the top being rounded; the field windings are completely protected, and the whole machine is waterproof. A fuse protecting the field windings from excessive current is located in the front plate of the machine, where it is readily inspected and changed, if necessary. The removal of a housing, held in place by a spring clasp, exposes the commutator and brushes for inspection and cleaning, no tools being needed.

An ingenious feature of the National generator is the incorporation of means whereby the output of the machine may be slightly increased in cold weather to compensate for the sluggishness of the battery due to the low temperature. A plug is put in the "warm weather" receptacle or the "cold weather" receptacle, as the season may demand, and the machine varies its delivery accordingly.

By designing the generator to run at magneto speed the necessity for separate driving means is eliminated, it being necessary only to couple the generator shaft to the armature shaft. The coil for raising the tention of the current for ignition work is built into the upper part of the generator, where it is thoroughly protected, and it is said to be unaffected by heat, proof against water and dust, and to be unaffected by grounds or other disturbances of the lighting system.

The National starting motors are of drum shape, outwardly. They are series wound. Both armature and fields are built up of soft iron laminations, the exterior of the

armature is ground to give and make it possible to rur the poles without danger o armature winding is of the d form coils. The commutate large, of hard drawn copper with cut mica. The commut closed by a housing held in stantial spring clip that pe moval but still makes an cure and tight fastening.

For use with the combine lighting system, a dash un consisting of an ammeter, a relay, a fuse panel and lighti switches. In one of the positions the headlights are inspection, or for fuse rene of the dash unit may be re the use of tools, and when ritself securely.

#### Kellogg Adds Ford A

To the ever increasing n matic starters on the ma added the Air-Ford starter, Kellogg Mfg. Co., of Roche: which, as the name would i starter adaptable to Ford prises a compressor, a tanl cylinder and a run-over cl taches to the engine shaft orthodox starting crank. I parts rotary motion to the is admitted to the cylinder termediary of a chain, enc tubing, and which is wraj drum on the clutch member. ton has been pushed to the e by the inrushing air, it i means of a spring which, at wraps up the chain again rea

#### More Electric Apparatus

A new electric lighting sy especially for Ford cars, is Dyneto Electric Co., of S: in addition to its standard ! tric lighting and starting sys fit is complete in every deta a special Dyneto generator, : storage battery in a stee Briggs & Stratton switch, e with light over number plat flector fittings and bulbs for headlights and the necessar and screws, belting and so comes packed in a fiber cas tions for installation. Whil is of special design for the the characteristics and mucl ance of the standard Dynet larger size.

Indicating that the Ford is lected by manufacturers of



starting equipment any more than it is by makers of other things that go toward making a car really complete, the North East Electric Co., of Rochester. N. Y., shows another Ford outfit which, however, is designed for both lighting and starting. Except in the matter of size and the method of drive, the Ford system does not differ from the two larger systems of the same make. The starting motor is also the generator when the car engine is running; drive is through "silent" chain to a sprocket mounted on the fan bracket, and thence by

regulate the current automatically. At the same time, the voltage has been reduced from 24 to 12, which permits a lighter battery. A hand-operated switch for cutting out the charging current when the car runs at high speed also has been provided, to insure against overcharging. An attractive feature of the exhibit is a winding machine that is shown in actual operation putting on the coils, which are made up of flat ribbons of insulated copper. The use of the machine has cut the time of winding from 10 hours for two men to 3½ hours for one man.

described in detail in Motor World, has brought out a small model suitable for those little cars. The only difference between the new model and the older is that in the size. The generator takes the place of the fan, the dynamo forming the hub, from which the fan blades radiate, and the fan belt is used for the drive.

The Splitdorf Electrical Co., of Newark, N. J., shows. mounted on a big six-cylinder motor, one of its new starting motors driving through a rather complicated series of shafts and a final chain—an arrangement



LOOKING DOWN ONE OF THE BROAD "ACCESSORY" AISLES WITH THE PHILADELPH A BATTERY EXHIBIT IN FOREGROUND

another chain to a sprocket on the crankshaft. The outfit is complete to the last detail and the makers state that any garage man can install it in a day. The larger systems, which also use a single-unit machine, are designed for use in connection with larger engines and, of course, have suitable driving systems for the purpose.

New offerings by the Ward Leonard Electric Co.. of Bronxville. N. Y., consist of new sizes and new mounting methods for the lighting and starting generators and motors; in essential points there have been no changes. The United States Lighting & Heating Co., of New York City, also has adhered to the features that have characterized its flywheel type motor-generator. The carbon disk regulator has been discarded in favor of inherent current regulation, the field windings being so arranged as to

The Remy Electric Co., of Anderson, Ind., has, in addition to its line of starting motors, a starting-lighting unit in which two armatures are mounted in the same housing, one above the other, having common polepieces; the motor armature is above and drives through an overrunning clutch. The Jones Electric Starter Co., of Chicago. which makes the Jesco equipment, and which hitherto has used voltages of 8 to 16. shows a single unit system for 6 volts. The unit when running as a starting motor operates as a series motor, and when driven as a generator runs as a shunt machine. Both grounded and two-wire circuits are employed.

To go hack to Ford cars—it's practically impossible to keep clear of them—the Kemco Electric Mfg. Co., of Cleveland, whose clever little fan-type generator has been

made necessary by the peculiarities of the engine, the usual hurry-up to get ready for the show, and so on. It is intended that the motor should drive direct and so eliminate losses through gearing, bearings and so on. The motor is not by any means a bulky affair, but it is characterized by an energetic action that makes it capable of turning over the big "green" motor in the way that is necessary for satisfactory starting. The system operates at 12 volts. The use of differential windings makes the machine self-regulating and greatly simplifies the installation and, of course, tends to increase reliability by cutting down the number of parts.

The Gray Pneumatic Gear Shift Co., of Chicago, showed not only its pneumatic gearshifting system, which has been described in detail in Motor World, but also a pneumatic starter which is credited with sufficient power to spin a 41/2 x 51/2 motor 300 revolutions a minute. Starting motor and compressor, both of which are of the double-cylinder reciprocating type, are mounted together at the front of the car. The compressor is air-cooled and is mounted forward of the starting motor. The system is self-oiling throughout. The Thurber Rotary Starter Co., of Detroit, shows a starter that has been considerably improved, as set forth in Motor World recently, by the incorporation of the compressor with the motor at the front of the car. Unlike the Grav system, the Thurber system uses a rotary air motor for starting, the sliding vane principle being employed. A smaller size than the original large machine is now built.

#### Bendix Starter Gear-Shift Appears.

A gearshifting device for use in connection with electric starting motors is a feature of the show at the stand of the Torbensen Gear & Axle Co., of Newark, N. J., being part of an Argo starting motor. The object is to provide an automatic means for aliding the motor pinion into mesh with the driving gear on the engine flywheel or elsewhere without, however, sliding the whole shaft back and forth. The pinion is mounted on the shaft so that it can slide back and forth far enough to permit it to get into and out of engagement with the gear teeth. A quick spiral is cut in the shaft, and in it projections from the pinion engage, so that the pinion must turn, following the spiral, when moved backward or forward. To one face of the pinion is attached a small counterweight. When the starting motor is idle the counterweight, in seeking the lowest position, pulls the pinion around and, as it cannot turn without following the spiral in the shaft, it moves backward, clear of the gear, the spiral, of course, being cut so that this will be the direction of its movement. When the starting motor armature commences to turn, however, its shaft screws the pinion forward, so to speak, the counterweight preventing it from turning until it gets to the end of the spiral. In that position it is engaged with the gear teeth, and at the same time it is practically solid with the end of the armature shaft, the counterweight is carried around with it. The instant the engine picks up and begins to drive the motor, however, the pinion is backed off along the spiral, and it remains clear of the gear until current is applied to turn the armature shaft.

#### Crowd About Hartford Electric Brake.

The Hartford electric brake, which, as already has been made clear in Motor World, consists of a motor of the same type as the Hartford starting motor, with

a drum upon which a brake-operating cable is wound is shown connected and in working order. The rear part of a chassis has its rear wheels turned by an electric motor. The little brake motor, with cable connected to the rear wheels, is set to pulling by a mere twitch of a lever, and the spinning wheels are brought to a stop that indicates a heavy pull on the cable. The system is always in the center of a crowd. The electric control-the motor takes its current from a battery-is such that the braking effect can be made as light or as heavy as may be desired. The brake can be attached to practically any car, it is stated, whether old or new.

A new type of dual ignition is shown by the Heintz Electric Co., of Lowell, Mass. The idea is simple and consists of using a high-tension magneto in the usual way, with a battery for the alternative current supply. Instead of using a dash coil, however, the winding of the magneto armature is used for the purpose, there being a primary winding, of course, beneath the regular winding. The magneto distributor is used for both sides of the system. The Heintz exhibit was expected to include a new carburetter, but it—there's only one, so far—got lost in transit and so was not in place up to the middle of the week.

#### Eiker Added to Carburetter Family.

Distinctively new in principle is the Eiker carburetter, which is shown by the Eiker Carburetter Co., of Newark, N. J. Its especially novel feature is the needle valve, which is incorporated with the butterfly throttle so that when the throttle is opened the needle is screwed further from its seat and the supply of gasolene increased in proportion to the throttle opening and consequently to the quantity of air which is passed. The device is made in two models, vertical and horizontal, and in three sizes.

While not distinctively new in principle, several new models of the Stewart carburetter are shown at the booth of a company which handled no such products last year—the Detroit Lubricator Co., of Detroit. The newest additions to the Stewart line are intended for Ford cars and for cyclecar use, and save for size and for the arrangement of the corelated parts the better to fit them for service in more crowded places and for smaller powered motors, there are no changes.

The Master carburetter, which is the product of the Master Carburetter Co., of Los Angeles, Cal., is a new comer. It is intended to handle not only gasolene, but also heavier fuels, such as kerosene and distillate and, such being the case, it is but natural to expect that provision for supplying heated air should be made. Its particular claim to novelty is based on the fact

that a rotary cylinder throttle is provided, which in the course of opening uncovers the multiple jets through which the gasolene enters the mixing chamber, so that the amount of gasolene supplied bears a definite relation to the quantity of air and constancy of mixture is approximated.

#### Sunderman in Slightly Altered Form.

The Sunderman safety carburetter, shown at the booth of the carporation of that name of Newburgh, N. Y., appears for the first time in new form if not in new principle. The same features which made the carburetter distinctive in the older model, the lifting hollow cylinder with needle attached which rises under the suction of the motor increasing the area of the air passage and also increasing the jet opening. the mushroom safety valve preventing a "blowback" in case an inlet valve should stick and the perforated plate serving at once to incorporate the gasolene and air into a homogeneous mixture and prevent the passage of flame into the mixing chamber, all are retained. The floating ball which formerly was used to control the admission of the air through the main air inlet, however, has been done away with and the shape of the device has been altered.

As for the Schebler, Wheeler & Schebler of Indianapolis, who manufacture and exhibit that make of carburetter, have produced one new model which differs widely from anything which has borne the Schebler imprint up to this time. It is of the single jet type with the opening of the gasolene jet controlled by the movement of the bonnet valve which serves for the admission of the air; the amount of gas admitted, therefore, is dependent upon the opening of the air valve and the quantity of air admitted, so that the mixture is constant in proportitons for all motor speeds.

#### Stromberg and Carter New Types.

A new model also has been added to the Stromberg line shown by the Stromberg Motor Devices Co., Chicago, Ill. It is known as the model GA and differs from the model G, or two-jet model, only in the design of the air valve, which is constructed with a differential acting, impulse resisting bonnet. The arrangement is such that the valve will not "flutter" and alter the proportions of the mixture and permits of the fitting of a dash control which provides for the full adjustment of the air—which is the only adjustment provided—from the seat.

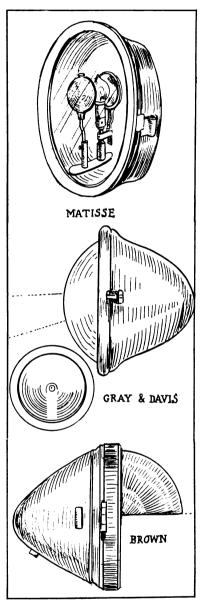
The Carter carburetter, another newcomer, is shown at the exhibit of the H. W. Johns-Manville Co. It is of the multiple jet type, the suction of the motor being responsible for the gasolene being forced up through a tube perforated with very fine apertures arranged in helical form; the greater the suction of the motor, the higher the gasolene rises in the tube and the more holes it covers and percolates through. The control of the supply to the float chamber is by means of a globular metal float which floats freely on the surface of the gasolene. When the level of the liquid drops, the ball rests on a lever which raises the needle from its seat against the action of a spring. This arrangement, it is claimed, prevents undue vibration of the needle and maintains the level of the gasolene constant.

As for the Rayfield, Flechter and Motsinger carburetters, they have been improved in detail only since the last time out at the show. The Rayfield device has had the needle arrangement improved and the gasolene line now enters at a point in the center of the float chamber instead of in an offset housing, as heretofore; this, of course, is due to the fact that in effecting the change to the needle, the lever operated device was abandoned and a needle of the type concentric with the float adopted. Other changes are the better marking of the adjustments and the fitting of a positive lock to the throttle stop. The Flechter models have been bettered to the extent that a steering column control has been added the better to fit the carburetter to the needs of a car equipped with an automatic starter.

#### Improving Carburetion and Aiding Starting.

There has been a veritable rush to the production of devices to improve carburetion or to facilitate starting. Of the many devices of the sort which are shown for the first time, the Stewart Thermo-Automatic carburetter adjuster, produced and shown by the Stewart-Warner Speedometer Corp., perhaps is the most interesting. The device comprises a bulb filled with mercury connected with the adjuster by means of a flexible metallic tube. The adjuster is a Barden coil encased in a suitable metal box and as the mercury expands under the rising temperature of the motor-the bulb is fitted to the water manifold so that it protrudes into the piping and is surrounded by the water—the expansion of the coil is transmitted to a lever which, in moving, serves to alter the adjustment either of the air valve or the gasolene valve, according to the carburetter it is applied to. The aim of the device is, of course, to "fatten" the mixture when the motor is cold by admitting more gasolene or less air, as the case may be, and to make the mixture leaner when the motor warms up.

Arnold Heating Plugs shown by the H W. Johns-Manville Co. and the Sure Start Vaporizer made by the United Motor Equipment Co., are vaporizers of the type where the electric current is made use of to supply the heat to evaporate the mixture. The Arnold device comprises a resistance coil swung in the manifold, the leads being carried through suitable insulated plugs which look for all the world like spark plugs; the Sure-Start vaporizer evaporates gasolene passed through it from the fuel



VARIETY IN GLARE REMOVERS

line, the vaporized liquid being led to the manifold, permitting of easy starting.

The Kellogg primer and the Webb Jay device are very similar in make-up. Both are intended to attach to the dash and are fitted with a gasolene container and with an inlet pipe tapped onto the fuel line and an outlet pipe tapped into the engine manifold. When the cock controlling the outlet of the gasolene is opened, the suction of

the motor draws the liquid into the manifold and cylinders and the gasolene leaving the fully closed chamber creates a vacuum which is responsible for the rising of the gasolene in the inlet pipe, so that the chamber is filled again. The first named primer is the product of the Kellogg Mfg. Co., of Rochester, N. Y., and the latter device is made by the Motor Devices Co., of Chicago. The Kellogg primer is also made for use on force-feed fuel systems and in this case is made to function also as an auxiliary air inlet and a medium for the introduction of a decarbonizing agent.

#### Force Pump in Breeze Device.

An interesting departure in the carburetter field is shown at the stand of the Breeze Carburetter Co., of Newark, N. J. Briefly, the chief feature of the carburetter is a little force pump connected so that when the throttle is suddenly opened the plunger is forced down and a jet of finely divided gasolene shoots into the column of air going to the motor. The amount of gasolene injected is proportionate to the stroke of the pump, which, in, turn, is proportionate to the amount of throttle opening. If the throttle is opened slowly very little gasolene is injected. A peculiar feature is that if the throttle is alternately closed and opened while the motor is running at good speed there will be no extra gasolene injected. This is because in order to fill the pump barrel with gasolene the throttle must remain almost closed long enough for the fuel to trickle in through a small hole, which it cannot do while the throttle is open, as the plunger covers the gasolene port. The air intake is non-adjustable and consists merely of a brass weight sliding on a vertical rod. When the motor is running at maximum speed the weight is drawn by suction to the middle of a bulb-like chamber and the air has free passage around it. The adjustment is through the gasolene needlevalve, which is controlled from the dash. Only one full turn is allowed, there being a stop to prevent further movement. Opened fully, the charge will be too lean. In either case, however, it will be good enough so that the motor will run fairly well, while the best adjustment will be somewhere between, depending on the motor, atmospheric conditions, and so on. For slow speed there is a separate feed of gasolene from the float chamber to the air pipe above the throttle.

#### Cutting the Glare from Headlights.

The agitation in many cities against glaring headlights has had its effect upon lamp manufacture, as indicated by several exhibits. Of course, the double-bulb headlight—with a large, centrally located electric lamp for country touring and a smaller



and less powerful out-of-focus lamp for city driving—is not essentially new and is recognized as one means of avoiding the censure of traffic policemen, but at least three others have evolved different schemes.

The Brown Co., of Syracuse, N. Y., made an attempt at a vizored headlight a year ago and exhibited a deflector, made in sections, which dropped down over the upper half of the lamp, being operated by a cord; this, the company states, did not prove satisfactory, and the arrangement is now made in different form.

As it is now constructed, the deflector is a quarter sphere of nickeled metal which is hinged at the side of the front; for country touring the deflector tips backward into the lamp, reposing behind the regular reflector, and for driving where a glare is undesirable the deflector tips forward and down over the upper half of the lens; it is operated by a small motor which is controlled from the seat. When acting as a deflector the device not only cuts off the upper half of the cone of illumination, but tends to concentrate by repeated reflection the cut-off light upon the road directly in front of the car. With the deflector down, light is thrown backward so that considerable illumination is effected as far back as the rear wheels.

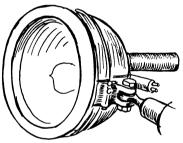
#### Other Devices for Dousing Dazzle.

A brand new Gray & Davis lamp is a big headlight designed to eliminate dazzle and yet illuminate not only the road far ahead but directly in front of the car and also the front of the car itself. The lens is a large one and is frosted all except a small, clear space in the middle, from which a concentrated pencil of light shoots out ahead. The large frosted area diffuses a soft light that illuminates without glare, and the lamp is said to be a satisfactory solution of the problem of complying with anti-dazzle laws and at the same time lighting the road well ahead.

The same problem is attacked in a totally different way by C. & A. Matisse, of New York, whose lamp is alternately a fullfledged projector and a small light resembling, in the matter of power, a side light. The lamp is a typical big headlight with a mirror reflector. In the focus of the mirror is the bulb. A hemispherical shield, with its interior forming a reflector, is mounted on a pivot and partly encloses the bulb. By means of a dash attachment the shield can be swung directly in front of the bulb or directly behind it. Still further to the front of the lamp is a ground glass of about the same diameter as the rotating shield. When the shield is turned with its hollow side facing the big mirror reflector it prevents the direct rays of the lamp from being projected forward; instead, the light is reflected to the main reflector and thence forward, the result being a powerful beam of light. When the shield is reversed the bulb is shut off from the big reflector, and its light, aided only by the small hemispherical reflector, is sent out through the ground glass in a soft, diffused glow.

One of the things the year has brought forth is the "sign lamp," the purpose of which is to permit reading roadside signs at night without the match-lighting performance. These take many forms, most of them being also useful as portable trouble lamps.

Spot lights, or sign lamps—according to the name preferred by the maker—are being featured in a number of instances; such types are seen in the spaces of the B & L Auto Lamp Co., of New York City; the J. Alexander Mfg. Co., of New York City, and the Badger Brass Mfg. Co., of Kenosha, Wis. There was, of course, the Roffy-Grace Corporation's lamp, which was described in Motor World last month, consisting of a small and compact arrangement of mirrors and lenses which projects a strong light forward and not above a hori-



ALEXANDER SIGN LAMP

zontal line from the center of the lamp forward.

#### Looking Over the Illuminators.

The Rose Mfg. Co., of Philadelphia, shows its tail lamps and brackets in improved types and the Standard Signal Lamp Co., of Bridgeport, Conn., is exhibiting a rear-end direction signal; it displays illuminated words—"Right," "Left" and "Stop"—to indicate the action of the car. A similar device is exhibited by the American Taximeter Co., of New York City.

Although not exhibited by its makers, there is still another rear signal lamp—the Lassco—which was viewed by show visitors; it was attached to an Ohio car and consists of a lens in four segments, reading "R," "L" and "Stop" and showing red to conform to tail lamp requirements. It is manufactured by the Automobile Safety Signal Lamp Co., of Philadelphia.

The Universal tail lamp and license bracket, made by the Combination Tail Light Co., of Boston, is not unusual in con-

struction. Although it has been on the market several months, the Gold Mangin Mirror Lens, shown by C. & A. Matisse, of New York City, is new to show-goers. The reflecting surface is coated with gold of special tint adapted to reflect monochromatic light. Lamps so equipped give a golden, glowing light which is claimed to be especially penetrating in fogs.

The small horn continues to have its "innings," especially the mechanically operated type; the Motophone, Elyria-Dean's Tuto and Rexo, Sparton, Echo, and the Nonpareil company's Pilot were made known prior to the shows, but several new ones made their bow after the Palace doors opened.

The Ka-Ha-Co sounds like a noise but is merely a combination of letters derived from the name of the maker, the Kales-Haskell Co., of Detroit. It is electrically operated and comes in three finishes, listing at \$7.50 and \$8.50. The company, a newcomer in its fild, also exhibits Zig-Zag windshields and Hand-View auto reflectors.

While Motor World's Before Shows number described the Olympic horn, made by the Electric Spark Appliance Co., of Brooklyn, it is one of the neally new ones and was publicly exhibited for the first time at tle show; it is electrically operated and sells for \$4, \$4.50 and \$5, and there is of course, the inevitable hand-operated model, at \$8.

#### Only "Hand Pedal" at the Show.

The Red Devil, which hitches onto the end of the exhaust pipe—is made by the Standard Motor Parts Mfg. Co., of Philadelphia. It consists of a fitting for the exhaust pipe with four "whistles" arranged to be sounded by the exhaust. A feature of it, so the exhibitor stated, is that it is operated by a "hand pedal." It sells for \$4, \$5 and \$6.

The Sparton Echo, made by the Sparks-Withington Co., of Jackson, Mich., differs from other hand-operated horns in that the notched wheel which strikes the diaphragm is operated by a collar which is pushed along a worm. Other horns generally employ a train of gears.

The Fitzgerald Mfg. Co., of Torrington. Conn., had an electric Clero horn as long ago as the last show, but it has added a hand-operated model and several electrically actuated types; these latter are the Clero Junior. \$4; Clero Bull Dog. \$3, and the Ford type. \$4. The internal mechanism consists of an electro magnet which operates an armature on the make-and-break principle. The armature carries a hammer which strikes a steel diaphragm. It may be operated on tour or six dry cells or a six-volt storage battery.

While the Typhoon electric signal is not

#### MOTOR WORLD

new, the Donnelly Motor Equipment Co., of New York City, has a new feature in a Typhoon electric horn push button. It is small, compact and may be attached to a flat surface or may be installed by means of a rigid conduit extending up the steering column and to the drivers' hand. The button retails for 25 cents and with the conduit. \$1.75.

#### New Things in Shock Absorbers.

The necessary effort to damp the vibration due to road shocks usually can be counted on to turn up one or more new devices in the shock absorber line, and in that respect the 1914 show is not unlike its predecessors; as was stated in the Before Shows Issue of Motor World, the trend this season has been toward the encased spring type, and several new ones were described in that issue, but still others made their initial appearance at the show.

The Rex, Universal, Cox, A. V., Flentje, J. M., Velvet, Gabriel, Herz, Le Telesco, J. H. S., Ely, Ames, and Westinghouse devices were described in their new or improved forms; of the newer ones there are the Powers, Peteler, and Acme, and the Rex also presents a type not in hand a month ago. The Rex Shock Absorber Co., of Stamford, Conn., originally made its device with a double volute spring in a metal case, but it now has adopted a single volute spring with an oil chamber and piston with by-pass

The Peteler device, made by the Peteler Shock Absorber Co., of New York City, is a hollow, winged spindle working in oil inside a cylindric case; adjustment from the outside is provided for. Price-\$75 per set of four.

Acme torsion springs, made by the Powell-Elliot Auto Repair Co., of Brooklyn, N. Y., are designed especially for Ford cars; they consist of an 8-shaped spring which attaches to the end of the standard Ford spring at its ends; price-rear sets, \$12.50. Another newcomer is the Powers Auxiliary Spring, made by the Powers Spring Co., of New York City. It consists of either single or dual spiral springs, unencased and arranged for attachment at front or rear: in case of front attachment the spring is affixed at the rear end of the front spring.

#### Veeder Odometer in a Clock.

\$22.50 and \$25.

Prices-Four, \$35, \$37.50 and \$40; two, \$20,

A new Veeder odometer in combination with a Waltham clock was uncovered by the Veeder Mfg. Co. It is designed specially for use on electric cars in which speed is of small moment. The case is of the rectangular type with rounded corners and is finished in nickel, the mile-indicator being set into the base of the case and below the

clock. Also at the Veeder stand is a hub odometer which is novel in that it registers the mileage no matter whether the vehicle moves forward or backward, the result being brought about by means of a special form of drive.

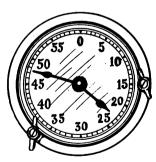
The Hoffecker Co., of Boston, has at its stand a combination speedometer and speed



VEEDER ELECTRIC CAR ODOMETER

lock that certainly is effective. Briefly, it consists of a contact in the speedometer which can be set, by means of a lock and key, to short-circuit the ignition at any desired speed, or to cut out the ignition entirely and so prevent the running of the motor. Going to the other extreme, the regulating feature can be cut out and the car driven up to its limit. With the regulator set for a given speed, the motor will be deprived of ignition when that speed is reached and normal conditions will automatically obtain as soon as the car shows

The Spark-No lock is one of the "little" devices which appeared at the booth of the



SPARK-NO IGNITION LOCK

Johns-Manville Co. It is a combination lock switch which looks for all the world like a clock and which is attached to the dash of the car in the same manner and which, when set, renders the ignition system inoperative. If when the lock is locked, the ignition switch should happen to be turned on, an alarm bell is sounded, attracting the attention of passers-by or the

car owner. The lock is released by manipulating the hands by means of a pair of thumbscrews until they make the proper combination on the dial.

#### Divine Brings Out Fabric Tire.

Smacking of "newness" probably more than anything which has appeared in the tire field in some time is the Divine Indestructible Fabric Tire, which is exhibited by the Divine Tire Co., of Utica, N. Y. It is of the solid type, designed for heavy truck use, and consists of a multiplicity of layers of water-proofed canvas cut to the shape of a cross-section of the tire and tightly compressed; the whole is locked onto a one-piece steel rim with clincher edges.

No adhesives are used, the tire being held together by the rim. Not only is the compression so great as to render the tire very hard and firm, but as the tire is used the surface picks up a coating of dirt and grit which renders the tire still more wear-resisting; in fact, after having been used a short time the grit and dirt bear the brunt of the wear.

While the tire is hard, it is not so hard as to render it unsatisfactory for motor vehicle use; it lacks the resiliency of rubber, but has an action, the manufacturers state, like "hitting a bag of meal." The exhibit includes a set which ran 5,000 miles on a heavy coal truck and which appear to have many miles left in them.

The Ideal laminated inner tube, made by the Voorhees Rubber Mfg. Co., of Jersey City, N. J., another new creation, is made up of eight layers of red rubber cured together; this construction is designed to eliminate air bubbles, for, the makers state, should there be a bubble in one lamination it would extend but an eighth of the way through the tube wall and would not prove dangerous.

#### Overman Conforms to S. A. E. Rim.

The Overman Tire Co.'s cushion tire has been adapted for use on a standard S. A. E. rim; for this purpose an extension ring and wood filler piece are bolted on at each side; the lugs which lock into holes in the tire base are carried on the extension ring.

The G. B. Sales Corporation, of New York City, a newcomer, displays the Ideal Non-Blowout inner tube, which is extra thick and is reinforced on the tread side by five endless non-stretchable cables embedded in the rubber. A 34 x 41/2 sells for \$17.55. This company also shows Red Wing Silver Gray tubes.

William C. Reynolds, Inc., who is labeled at the show Para Tire Co. of New York, has a line of tires and tubes under the name Para.

The Cataract Rubber Co., of Wooster, O., is comparatively new, to show-goers, at



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least; it displays a line of plain and breakskid tires and red and gray tubes.

The Weed Chain Tire Grip Co. is exhibiting a heavy-duty tire chain for trucks; the Lyon grip also is for the first time included in the Weed family. Walker grips, somewhat similar to the Weed, are shown by the Donnelly Motor Equipment Co.

#### Air Pumps Appear in New Form.

An air pump is such a simple contrivance that it would seem that there is scant room for improvement of the device. But that such is not the case is amply demonstrated by the number of new compressors which are shown and which embody very many new details, if not new principles. Foremost among the new pumps which are offered is the Stewart pump, which is made in two models, a four-cylinder and a single cylinder; both are intended for attachment to the motor or to the propellor shaft, provision in the way of a feathered shaft and a gear-actuating yoke being fitted to throw the device into and out of engagement. On the four-cylinder model, however, a hand crank can be attached if desirable. and the affair manually operated. On the four-cylinder model, the shaft is a straight steel rod with four eccentrics attached by means of which the pistons are actuated.

The pistons themselves, which measure 1 7/16 inches in diameter and which have a stroke of 11/8 inches, are devoid of either piston rings or washers and are polished true to fit a similarly finished bore in the cylinders. The inlet valve is a port uncovered by the piston at the lowest point in its stroke and is screened to prevent the ingress of foreign matter. The outlet valves comprise simple ball checks. Lubrication is effected by means of non-fluid oil packed into the base of the pump, and, of course, the inability of this lubricant to flow prevents its passage to the compression chamber where it is liable to get into the air line. The single-cylinder model is quite similar in design in every way save in the lubricating and the cooling means. The device is air-cooled but the radiating fins are vertical instead of horizontal, as in the larger model, and instead of the base being packed with non-fluid oil, lubrication is effected through the intermediary of a wick which contacts with the piston and which projects from an oil channel formed outside the cylinder near the base. The bore and stroke of the single model stand at 1 7/16 and 21/2 inches, respectively. The price of the four-cylinder model is \$25, while the latter device lists at \$15.

#### Trio of Cylinders in Tri-Phoon.

The Tri-Phoon pump which is exhibited by Stevens & Co., of New York City, is also a newcomer. It is novel in that it is provided with a trio of cylinders clustered around the drive shaft; the pistons are driven by means of a cam actuated by the shaft, a spring within the cylinder tending to keep the piston in contact with the cam surface. By way of reducing the friction to a minimum, a roller is fitted to the bottom of the piston. Like the Stewart pump, the inlet valve or port is uncovered by the piston at the very bottom of its stroke and the outlet valve is a ball check. The pump is hardly larger and has much the same appearance as a high-tension distributer and is driven by a vertical shaft in the same manner. Fitted with hose and gauge only. it sells for \$20, but with the requisite gears and fittings for attachment it costs \$25.

Master pumps which are the product of the Hartford Screw Machine Co., of Hartford, Conn., are made in a single and two-cylinder models. The pumps are air cooled, fully enclosed and lubricated by the splash system. The inlet valves are of the flat type and the outlet valves of the ball type; pistons are extra long and devoid of rings or washers. The pumps are fitted with the necessary drive gear and a throw-off yoke. The single cylinder model weighs seven pounds and the double cylinder type 10½ pounds.

#### Two Master Garage Pump Models.

Master garage pumps also are made in two models, both two-cylinder, air cooled and mounted on suitable trucks. The larger model compresses into a seamless steel tank to a pressure of 200 pounds to the square inch, but on the smaller model, save for a comparatively small equalizing chamber, the storage tank is lacking. In both cases an electric motor furnishes the power to operate the pump and the motor winding is altered to suit the characteristics of the current supplied. The larger model lists at \$135, equipped with an alternating current motor and \$130 with a direct current motor. and the smaller machine sells for \$75 and \$70 with the same respective equipment.

The Manzel pump, a two-cylinder engine driven pump, came to light at the booth of Charles E. Miller. It is of more than ordinarily compact design, is splash lubricated and is novel in that it is fitted with a safety valve which permits the escape of the air in case the pressure should rise above that which the tire will safely stand. The device lists at \$25.

The Springfield Metal Body Co., which makes metal bodies of the regulation type as well, is in a class of its own with its convertible bodies; these comprise a body of ordinary outline but with windows which are so arranged as to be easily put in place, enclosing the entire car; the result is much like a limousine. When an open body is desired the windows may be taken down

and stored in compartments in the body walls. The windows are mounted in thin frames so that a not large amount of space is required for storing them. The trend toward stream lines and domed fenders is seen in the body exhibits of the Springfield company, the Hayes Mfg. Co., and the Howard G. Budd Mfg. Co.

#### Pantasote Uses Fiber for Bodies.

Somewhat innovative is a fiber body shown by the Pantasote Co., the material being produced by the Agasote Millboard Co., of Trenton, N. J., a subsidiary of the Pantasote Co. The fiber adapts itself to molding processes and a limousine body exhibited in semi-finished form has its back and the sides as far forward as the rear doors of one solid piece. It is claimed that the material is lighter than some forms of wood, is not affected by weather and is exempt from wrinkling and warping. A delivery body of this material was exhibited at the commercial vehicle show last year and this has been exposed to the weather ever since, it is stated, with no damaging results.

C. Cowles & Co. included in its exhibit a new mechanical window lift, styled Fisher; it is designed especially for frameless windows, but is not limited to this type, as it may be applied to any type of car window. Briefly, the pane sets in a channel molding, a bicycle chain attaches to the molding and runs over a gear at the center of the door and a knob, operated by hand, actuates the device. A lever, spring and cord combination acts as compensation for the weight of the window.

In interior body fittings the toilet cases which used to be considered essential seem to have lost their popularity; in dome lights the general trend toward flush surfaces has made itself felt and the various lamp makers lay stress upon flush dome lights.

#### One-Man Tops Come Into Own.

With the adoption by car manufacturers of One-Man tops, these devices as a show exhibit have lost any element of "freakishness" which may have been attributed to them when they first appeared and are objects of undisguised interest; there are four in all.

Of course, the Golde and Sharrer are more or less pioneers, and the Pantasote Co.'s Solitaire top has been out for not so long a time, which leaves the very newest entry to the Cleveland Hardware Co., of Cleveland, O., which exhibited a design all its own; it, however, specializes in the production of the requisite sockets, preferring to leave the completion of the top to the car maker.

All of the tops are alike in that they are attached to the body at the rear seat only

#### MOTOR WORLD

and clamp or strap down upon the top of the windshield; in some cases the windshields are provided with a vertical post to the top of which the top locks. The supporting construction from the rear forward is a series of levers and bows which collapse when the top is grasped and properly manipulated.

As an accompanying illustration shows, the Golde Patent One-Man top, made by the Golde Patent Mfg. Co., of New York City, has one main bow which attaches to the rear seat; from this two bows extend upward and backward and from the top of the main bow the lever construction which supports the front of the top extends forward, concealed within the top.

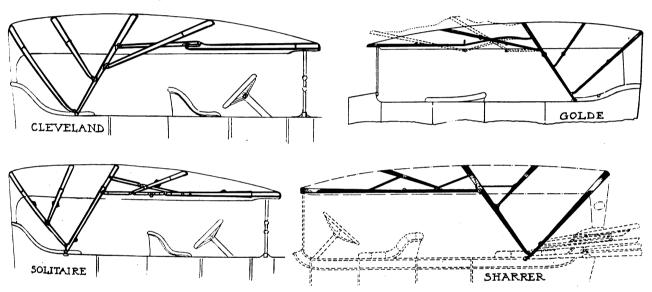
The rear construction of the top made by the Sharrer Patent One-Hand Top, made The Cleveland Hardware Co.'s top has a rear arrangement similar to that of Golde and Sharrer, but still another different forward construction is employed; a short bow extends from the main rear bow into the front of the top and the remainder is a horizontal lever construction.

Allied with the one-man top line of goods are two top lifters, designed to make the handling of the "many-man" top easier; the Brown Trafilog makers, of Cleveland, O., help the top on its journey over the car by means of poles which rest on the running boards or one pole which sets in the tonneau and supports the top while it is being raised or lowered.

The Metal Stamping Co., of Long Island City, styles its device the Triumph top lifter; it consists of a metal rod extending joints and square ball joints, which are shown by the Universal Machine Co., of Bowling Green, Ohio.

Recognizing the trend of manufacturers toward automatic gear shifts, the Warner Gear Co., of Muncie, Ind., has brought out a special gearset with provision made for mounting a device of the sort. A very small three-speed unit power plant fitted with either multiple disk or cone clutch also has been added to the Warner line adapted for either right, left or center control, as well as a new enclosed multiple disk clutch.

A new four- and a new three-speed gear have been added to the line of the Brown-Lipe-Chapin Co., Syracuse, N. Y. A new point is the fitting of a breather to the cases. A phosphor bronze worm gear also is new to the line.



BOW CONSTRUCTION OF FOUR OF THE NEW VARIETY OF ONE-MAN TOPS

by the Sharrer Patent Top Co., of New York City, is similar, but the forward arrangement differs; one hinged bow is alligned with the lower edge of the top and supports auxiliary lever bows; a cord is so installed that as the operator pushes the front up and back the shorter rear bow is drawn forward into its collapsed position.

The Solitaire top, made by the Pantasote Co., of New York City, differs considerably from either of these; instead of two rearwardly extending bows being attached to the main bow, the shorter auxiliary bow attaches to a long rearwardly extending bow and is inclined in a forward direction. Still a different forward construction is employed, but the ultimate result is the same—quick collapsibility. "With one hand in ten seconds" is the company's slogan. A filler board is inserted where necessary for forward attachment, and a chain anchors the rear of the top to the car body, affording rigidity.

from the rear bow bracket to the front bow bracket on each side of the car. A carriage, which runs along the rod, has a hole to which the front bows may be attached when it is desired to carry the top forward.

#### Bock Enters the Bearing Field.

New in the line of car components is the Bock roller bearing shown by the Bock Bearing Co., of Toledo, O. The bearing is of the tapered roller type designed for both radial and thrust loads and is novel in that, despite the fact that the roller is flanged, it is so designed that the speed of travel of all the contracting surfaces is the same, so that there is no slippage; in other words, there is no friction save rolling friction, so that the bearing in point of efficiency is equal to the best ball bearing, while at the same time it will carry much greater loads, both radial and thrust, than a ball bearing. Also new in about the same line are the Universal adjustable universal

New in the line of piston rings is the Duplex, which is the product of M. L. Dunham, of New York, the especial virtue of which is that the joint is sealed against the passage of gases. The result is brought about by making the ring, although formed of a single piece of metal, in the form of a double loop, the coils lying close together. The cut separating the coils is not helical, so that the coils are of uniform width throughout, the "crossover" or connection between the two coils being at right angles to the coils and the end of each coil "staggered" in so that it overlaps the point of junction, the whole forming a sealed joint. The rings are made in suitable sizes to fit all motors.

Somewhat on the same order are the Leak-Proof piston rings which are shown by the McQuay-Norris Co., of St. Louis, Mo., and which, while not strictly new, are interesting because they are shown for the first time at a New York show. Like the

Dunham device, the Leak-Proof ring is a compound ring, made, however, in two separate and distinct parts. Each of the parts is of L cross section and they are so fitted together that the projections of each part fit flush with the sides of the other; the diagonal joints are so arranged that they fall opposite each other and the projecting portion of each ring serves fully to cover the cut in the other so that there is no passage for the gases. The rings are stocked in all sizes from 2½ inches to 7½ inches in diameter and range in price from \$1.75 to \$2.50 for the respective sizes.

#### Presto Rim's Quick Demountability.

One more was added to the quick demountable rim family by the Presto Inter-Rim Co.. of Boston; the locking ring is made tight by a cant-hook arrangement, the handle of which swings upward and locks against the rim by means of a turn-button. This locking device is the feature of the rim, for when the locking ring is removed the rim is pulled off as in ordinary construction.

There is, of course, the product of the Dunlop Wire Wheel Corporation of America, a new company, and the Schwarz Wheel Co. shows the "spiders" which were described in Motor World's Before Shows Issue. The Standard Welding Co., whose latest product is its 60 rim, displays sizes for cyclecar use.

The G. B. Sales Co. appears as sponsor for Crown Prince pressed steel wheels.

In spring lubrication the Dann Oil Cushion Spring Insert Co., of Chicago, has attacked the problem with an original device; it consists of a strip of perforated metal. 1/4 inch narrower than the spring leaves and extending the length of the leaf contact; the perforations are packed with a lubricant in the Dann factory and the material is coiled and sold by the foot. It is claimed that 30,000 miles can be driven without relubricating and that when this is necessary the perforations may easily be packed with more lubricant.

#### Putting New Spouts on Old Cans.

Manufacturers of lubricants as a general rule continue their products at the previously maintained standards, but in two instances the receptacles have been slightly altered; Adam Cook's Sons. of New York City, have equipped their Albany oil cans with a nozzle which turns in over the top of the can when not in use and may be turned out over the edge when it is desired to pour oil. The raising and lowering of a screw cap acts as a stopper.

The Vacuum Oil Co. has adopted a spout instead of a short nozzle for its grease cans; these cans have a false bottom and operate by a hand plunger.

The International Metal Polish Co., of Indianapolis, has perfected a Blue Ribbon waterless soap; the most grimy hands may be thoroughly cleansed, it is claimed, by washing with the soap, which is of a pasty consistency. As a demonstration, one of the exhibitors poured a bottle of ink on his hands and then proceeded to wash it off.

The Hall-Thompson Co., of Hartford, Conn., which is new to show visitors, exhibits 56 varieties of specialties, such as soaps, polishes, tire paints, etc. Its feature is a tire paint in white or gray which, it is claimed, protects the rubber, improves its appearance and will not crack. The Joseph Dixon Crucible Co., of Jersey City, N. J., has adopted a double-top can, the first top being removable by means of a key which winds off a retaining band of soft metal.

Inventing lavor saving tools provides mental exercise for the trade's geniuses, and each show always reveals a few valuable additions; one of these is the Quixet wrench, of the monkey type, found in the space of the G. B. Sales Corporation. Its jaws are like those of the regular screw monkey wrench, but the place of the screw is taken by a saw tooth and thumb spring arrangement; the jaws may be released, moved and set by the movement of the thumb.

#### Auto Ambulance for Sick Car.

Another, which has been illustrated in a previous issue of Motor World but which is less than a year old, is the Weaver Auto Ambulance; this consists of a small two-wheeled truck carrying a swiveled support for carrying the front axle of a car which has broken down; a hollow telescoping tongue is provided for attachment to the towing car. It is shown by Ralph Waldt.

The Benham automobile lock—shown by the G. B. Sales Corporation—is "similar but new"; it has prototypes in previous devices. It attaches to the gear shift lever and locks the gears in neutral by pushing the locking device down into the quadrant. It is released only by use of a key.

Julian H. Faw displays a triple socket wrench for Ford cars; it has a hammer shaped head with a socket at each end and a socket in the end of the handle.

The Spartan three-in-one tire tool, hammer and screw driver is a part of the exhibit of the G. B. Garage & Mfg. Co., of Hempstead, N. Y. This company also is marketing the G. B. valve tool, for grinding and reseating valves.

The stand of the Eveland Engineering & Mfg. Co., of Philadelphia, Pa., looks like a section of a manufacturing plant, for it is occupied by a battery of electric riveting machines of various sizes, in active operation. The machines vary in size but not in principle of operation. The part to be rivet-

ed is placed on the platform of the riveter, with the rivet in position, and by means of a hand lever a die is brought down on the end—not the head—of the rivet with only slight pressure, and a switch in the handle is pushed, which sends an electric current through the rivet. In an instant it begins to glow, and in about one second, for a rivet glow, and in about one second, for a rivet about 3/16 inch thick, the end is hot enough to rivet over. Then the handle is given a quick downward pull, which heads over the rivet, and the work is done. It is quick and simple in the extreme.

#### Helping Chauffeur Jog His Memory.

Among the novelties is a Chauffcur's Diary, shown by the Perfection Accessories Co., of New York City; it consists of a memorandum pad which clamps to the steering wheel spoke nearest the chaffeur and is designed to aid him in remembering his call number at theaters and to assist him to make notes of errands and other easily forgotten details. A pencil accompanies the outfit. This concern also handles and is displaying a headlight glare eliminator, consisting of a rectangular-shaped section of amber-colored glass mounted in front of the driver. The company also displays rubber pedal caps and accelerator heel rests.

The Powers Shock Absorber Co., of New York City, displays a rear-end adjustable bumper of which the novelty is its mounting; the bumper is made of semi-steel castings and a pressed steel channel bar backed up by 750-pound springs. The supporting brackets are clamped to the lower half of the spring by racer clips and enclose the springs.

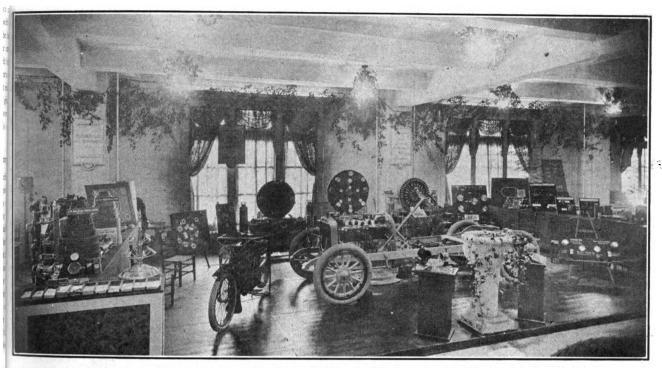
A. N. Clark & Son, of Plainville. Conn. had the comfort of the tonneau passengers in mind when it designed its Tonneau Adjustable windshield; this consists of two separate shields pivoted on posts at each side of the tonneau. The shields may be placed at any angle to the wind or may be swung entirely to one side.

#### Faw's Nickel-in-the-Slot Pumplok.

The Pumplok, shown by Julian H. Faw. is a sort of nickel-in-the-slot attachment for gasolene pumps; a vending device is provided for the reception of coin-shaped disks which bear numbers indicating the various employes; all oil and gasolene drawn is thereby registered against the employe drawing it. In addition to this individual record, there is an automatic counter which registers every tenth of a gallon. Each metal check inserted releases the pump for a certain amount.

S. F. Bowser & Co. exhibited a five-gallon floor pump wherein a gear combination returns the plunger five times as fast as it goes up, the handle speed being the same in both cases.

# Summary of Accessories Exhibitors that People the Palace



EXTENSIVE SPACE REQUIRED FOR THE PROPER DISPLAY OF THE JOHNS-MANVILLE ACCESSORY EXHIBIT

Acme Torsion Spring Co., New York—Torsion springs, shock absorbers (F—4).

Ajax Trunk & Sample Case Co., New York

-Ajax trunk and tire cases (D-104).

Alexander Mfg. Co., J., New York—Jaco mirrorscopes, lamps and specialties (E-1).

American Bronze Co., Berwyn, Pa.—Non-Gran bearing metals (C-115).

American Express Co., New York—Information booth (D-17).

American Pump & Tank Co., New York—Fuel supplies (D-141a).

American Taximeter Co., New York City— Jones & Popp taximeters, Recordographs and signal lamps (D—24).

Apple Electric Co., Dayton, O.—Aplco lighting and ignition systems (C—94-95).

Arnold, N. B., Brooklyn, N. Y.—Slikup specialties (D—140).

Asbestos & Rubber Works of America, New York)—Motobestos and asbestos products (D—105).

Asch & Co., Inc., New York—Bumpers, shock absorbers, etc. (D—58).

Automobile Club of America, New York—
(D-109-110).

Automobile Journal Pub. Co., Pawtucket. R. I. (D-32a).

Automobile Trade Journal, Philadelphia.
Pa. (D-203).

Automobile. New York (D-205).

Automobile Dealer and Repairer, New York (D-108).

Automobile Supply Mfg. Co., Brooklyn, N. Y.—Newtone and Motophone horns (D—29).

B. & L. Auto Lamp Co., New York--B. & L. lamps (D-174).

Badger Brass Mfg. Co., Kenosha, Wis.— Solar lamps (C—46).

Baker, F. A., & Co., New York—Indian motorcycles, Trumbull cyclecars, Simplex sidecars and motorcycle specialties (D—6).

Baum's Castorine Co., Rome, N. Y.—
Baum's automobile body soaps (D—101).
Bausch Machine Tool Co., Springfield,
Mass.—Bausch drilling machines (D—60).

Benford Mfg. Co., Mt. Vernon, N. Y.— Monarch spark plugs, lamp lighters and wheel pullers (D—90).

Berg Auto Trunk & Specialty Co., New York—Berg automobile trunks (D-138-139).

Bicycling World Co., New York (D-173). Blackledge, John W., Mfg. Co., Chicago-Velvet shock absorbers (D-89).

Bock Bearing Co., Toledo, O.—Bock roller bearings (D—34a).

Bowser, S. F., & Co., Inc., Ft. Wayne, Ind.

—Gasolene storage systems (C 47-48).

Braender Rubber & Tire Co., Rutherford, N. J.—Braender tires (D—106).

Breeze Carburetter Co., Newark, N. J.— Breeze carburetters (C—89).

Brown Co., Syracuse, N. Y.—Brown Impulse tire pumps (D—215).

Brown, Wm. H., Cleveland, O.—Brown Trafilog and Brown top lifter (D—122). Brown-Lipe-Chapin Co., Syracuse, N. Y.—Gearsets and bevel gears (C—66).

Buda Co., Harvey, Ill.—Buda motors (C—78).

Budd, Edw. G., Mfg. Co., Philadelphia, Pa.
—Sheet steel bodies (D—196-197).

Byrne, Kingston & Co., Kokomo, Ind.— Kingston carburetters and ignition specialties (C-59).

Carr, F. S., & Co., Boston, Mass.—Never-leek top materials (D—87).

Cataract Rubber Co., Boston, Mass.—Cataract tires (D—40).

Champion Ignition Co., Flint, Mich—A C spark plugs (C—106).

Champion Spark Plug Co., Toledo, O.— Champion spark plugs (D—12).

Chase, L. C., & Co., Boston, Mass.—Chase top fabrics (C—72).Chauffeur Publishing Co., Syracuse, N. Y.

(D-51).

Clark, A. N., & Son, Plainville, Conn.—Individual windshields (F-2).

Cleveland Hardware Co., Cleveland, O.— Automobile hardware and standard parts (D—12a).

Cleveland Worm & Gear Co., Cleveland, O. —Worm gears (D—16).

Clucker & Hixson, New York—Sundries (F-1).

Coes Wrench Co., Worcester, Mass.—Coes wrenches (C—57).

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Columb Tyres Import Co., Inc., New York
—Prowodnik tires (D-45).

Cook's Sons, Adam, New York—Albany lubricants (C-58).

Corbin Screw Corp., New Britain, Conn.— Corbin-Brown speedometers (D-202).

Cowles, C., & Co., New Haven, Conn.— Fisher mechanical window lift and other automobile specialties (C—116).

Cox Brass Mfg. Co., Albany, N. Y.—Cox Rebound E-Zers and other automobile specialties (D—55 to 57).

Cramp & Sons Ship & Engine Building Co., Philadelphia, Pa.—Cramp's bearing and other metal products (C—43).

Cyclecar Age, New York (D-176).

Daniels, Smalley, Detroit, Mich.—Sly tire holders, Mitchell tool boxes, New Era springs and other specialties (D-4).

Dann Oil Cushion Spring Insert Co., Chicago, Ill.—Lubricating, devices for leaf springs (D-27).

Dean Electric Co., Elyria, O.—Elyria-Dean warning signals, speedometers, ignition and other specialties (C—69 to 71).

Detroit Electric Appliance Co., Detroit, Mich. — Deaco starting-lighting-ignition systems (C—104-105).

Detroit Lubricator Co., Detroit, Mich.— Stewart carburetters and Detroit mechanical force feed oilers (D-123).

Detroit Steel Products Co., Detroit, Mich.—Detroit springs (D-178).

Divine Tire Co., Utica, N. Y.—Solid Tires (E-3).

Dixon Crucible Co., Jos., Jersey City, N. J. —Graphite lubricants (C-38).

Doehler Die-Casting Co., Brooklyn, N. Y.

—Babbit-lined bearings, die-cast pumps
and other parts of white metal and aluminum (C—92-93).

Donnelly Motor Equipment Co., New York
—Ely shock absorbers (D-52-53).

Double Fabric Tire Co., Auburn, Ind.—Interlock inner tires, Vulco and Junion patches, Jumbo boots and other tire specialties (D—78-79).

Dunham, M. L., New York--Seal-joint piston rings (D-32).

Dunlop Wire Wheel Corp., New York—Dunlop wire wheels (D-91-92).

Dykes Co., J. L. G., Chicago, Ill.—Dykes tire reliners (D-83).

Dyneto Electric Co., Syracuse, N. Y.— Dyneto and Entz starters (C—68).

Eavenson & Sons, J., Camden, N. J.—Soaps and polishes (D-46).

Eclipse Machine Co., Elmira, N. Y.— Eclipse two-speed gears. Morrow coaster brakes, Eclipse motorcycle clutches (D —145-146).

Edison Storage Battery Co., West Orange, N. J.—Edison storage batteries (C—96-97).

Edmunds & Jones Mfg. Co., Detroit, Mich.
—Gas, oil and electric lamps (C—51).

#### MOTOR WORLD



WHERE THE LONG LIST OF WESTINGHOUSE PRODUCTS ARE SET OUT

Eiker Carburetter Co., New York-Eiker. carburetters (D-69).

Electric Auto-Lite Co., Toledo, O.—Auto-Lite electric lighting, starting and ignition systems (D—86).

Electric Spark Appliance Co., New York—Olympic horns (D-177a).

Electric Storage Battery Co., Philadelphia, Pa.—Exide storage battereies (C-30).

English & Mersick Co., New Haven, Conn.
—Concealed hinges (D—107).

Essex Rubber Co., Inc., Trenton, N. J.— Essex red rubber tubes and other tire specialties (D—180).

Eureka Sales Co., New York-Vacuum cleaners (F-3).

Eveland Engineering & Mfg. Co., Philadel-

phia, Pa.—Electric riveting machines (D.—59a).

Faw. J. H., New York—Red Seal priming plugs. Ford valve grinders and lighting sets, oil lamp adapters (D—24a).

Fentress-Newton Mfg. Co., Detroit, Mich.— F-N motorcycle accessories (D-117).

Findeisen & Kropf Mfg. Co., Chicago—Rayfield carburetters (C—98-99).

Fischer Motor Corp., New York—Magic motors (D—96-97).

Fitzgerald Mfg. Co., Torrington, Conn.—Clero horns (D—36a).

Flentje, Ernst, Cambridge, Mass.—Flentje hydraulic shock absorbers (D-179).

Franklin Mfg. Co., H. H., Syracuse, N. Y.— Die eastings (D—217).



TASTEFULLY ARRAYED EXHIBIT OF SPLITDORF EJECTRICAL PRODUCTS

sse, Peter A., & Co., Inc., New York—shelby tubing, Poldi tool steel, machinery and supplies (D-43).

zer Lubricator Co., Chicago, Ill.—Lubriants, soaps and polishes (D—31a).

ake Co., Herbert F. L., Inc., New York— Coventry chains, White & Poppe carbuetters (D—111).

briel Horn Mfg. Co., Gabriel and Jubite horns and Gabriel rebound snubbers (—44).

nge Equipment Mfg. Co., Milwaukee, Wis.—Gemco automobile parts and accesories (D—82).

B. Garage & Mfg. Co., Inc., Hempstead, N. Y.—G. B. valve tools and Sparton ammers (D—13).

B. Sales Corporation, New York City— Quixet wrenches, Ideal tubes, Crown Prime Steel Wheels, Benham auto-locks, oxy-acetylene welder and carbon remover (D—10).

m Supply Co., Waterbury, Conn.—Chemcally treated dusting and polishing cloths (D-7).

mmer-Detroit Starter Co., Detroit, Mich.

Air starters (D—120).

obe Machine & Stamping Co., Cleveland, O.—Globe metal tool and battery boxes (C—81).

one-man tops (D—181-182).

ay & Davis, Inc., Boston, Mass.—Gray and Davis lighting and starting systems and lamps (C—26 to 28).

hay Pneumatic Gear Shift Co., New York —Gray pneumatic gearshifting system (D-13a).

hossman Mfg. Co., Emil, Brooklyn, N. Y. -Red-Head spark plugs and other automobile parts and accessories (D-62 to

all-Thompson Co., Hartford, Conn.— Soaps, polishes and tire repair materials (D-176a).

ans Motor Equipment Co., La Crosse, Wis.—Tank and pressure gauges and other specialties (D—44).

arris Oil Co., A. W., Providence, R. I.— Harris lubricants and soaps (C—88).

artford Machine Screw Co., Hartford, Conn.—Master spark plugs and power tire pumps (D—81).

antiord Suspension Co., Jersey City, N. J.

-Truffault-Hartford shock absorbers,
Hartford electric brake and starting and
lighting systems (C—49-50).

avoline Oil Co., New York—Havoline oils (D-47).

hws, Geo. A, New York—Panhard lubricants (C—85-86).

hythorne Mfg. Co., Bridgeport, Conn.— Old Sol lamps and fittings (D—206).

ayes Mfg. Co., Detroit, Mich. Pressed steel specialties (C-27).

tinze Electric Co., Lowell, Mass.—Heinze

magnetos and ignition specialties (C—108).

MOTOR WORLD

Herz & Co., New York—Herz spark plugs, timers, and other ignition specialties, pumps, etc. (D—200).

Hoffecker Co., Boston, Mass.—Hoffecker speedometers (C-61).

Holtzer-Cabot Electric Co., Brookline, Mass.—Holtzer Cabot electric lighting systems, Reacto horns, Newcomb carburetters (D—143).

Horseless Age Co., New York (D-116).

Houk Co., George W., Philadelphia, Pa.— Houk wire wheels (D—198).

Houpert Machine Co., New York—Ground machine work (D-142a).

Hudson Export & Import Co., New York—A. V. shock absorbers (D-67).

Hydraulic Oil Storage Co., New York—Oil storage systems (D-2).

International Acheson Graphite Co., Niagara Falls, N. Y.—Graphite lubricants (C —114).

International Metal Polish Co., Indianapolis, Ind.—Metal polishes (D-36).

J. M. Shock Absorber Co., Inc., Philadelphia, Pa.—J. M. Shock Absorbers (D—42).

Janney, Steinmetz & Co., Philadelphia, Pa.—Seamless steel tanks (C—113).

Johns-Manville Co., H. W., New York— J-M asbestos and other products, Jones speedometers, Metzger spark plugs, Carter carburetters, Long horns, and other specialties (D-3).

Jones Electric Starter Co., Chicago, Ill.

—Jesco starting and lighting systems.

(D—33).

Justice Co., A. R., Philadelphia, Pa.—U-Kan-Plate silver polish (D—60a).

K. W. Ignition Co., Cleveland, O.—K-W low-tension generators and other lighting and ignition specialties (D—207).

Kahnweiler's Sons, David, New York—Simplex fire extinguishers (D—54).

Kales-Haskell Co., Detroit, Mich.—Ka-Ha-Co electric horns and mirrorscopes and sheet and metal stampings (D-177).

W. J. Kells Mfg. Co., New York-Radiators (O-211).

Kellogg Mfg. Co., Rochester, N. Y.—Air pumps and air starting systems (D—199).

Kemco Electric Mfg. Co., Cleveland, O.— Fan-type electric generators (D-106a).

Kent Mfg. Works, Atwater, Philadelphia, Pa.—Atwater Kent ignition systems and Monoplex horns (C—87).

Laidlaw, Wm. R., Jr., New York—Processed upholstering fabrics (D-22).

Leonard Electric Co., Ward, Bronxville, N. Y.—Ward Leonard electric lighting and starting systems (D—28).

Leather Tire Goods Co., Niagara Falls, N. Y.—Woodworth treads and other tire specialties (C—62).

Light Mfg. & Foundry Co., Pottstown, Pa.

—Automobile alloy castings and gearsets (C—52).

Link Belt Co., Philadelphia, Pa.—Link belt silent chains (C-111).

McQuay-Norris Mfg. Co., St. Louis, Mo.— Leak-proof piston rings (D—210).

M. & A. M. Office (C-100)'.

Majestic Mfg. Co., Worcester, Mass.—Majestic sidecars and Persons saddles (D— 169-170).

M. & S. Gear Co., Kansas City, Mo.—Muehl spiral differentials (E-8).

Manufacturers' Foundry Co., Waterbury, Conn.—Automobile castings and parts (C—80).

Marathon Tire Sales Co. of N. Y., New York—Marathon tires (D-11).

Marburg Bros., Inc., New York—Mea magnetos and other specialties (D—113 to 115).

Master Carburetter Distributers, New York
—Master carburetters (F—9).

Matisse, C. & A., New York—Lenses, lens mirrors, etc. (E-2).

Mayo Mfg. Co., Chicago, Ill.—Spark plug pumps and tire gauges (B—213).

Mechaley Auto Co., Stamford, Conn.—Rex shock absorbers (D-38).

Metal Shelter Co., New York—Pruden portable garages (D-21).

Metal Stamping Co., L. I. City, N. Y.—Hub caps, grease cups, wheel pullers, lighting outfits and other specialties (D—74).

Miller, Chas. E.—Excel jack, M.M. controller and equalizer, and a complete line of supplies and specialties (D—31).

Miller Rubber Co., Akron, O.—Miller tires (D—1).

Model Gas Engine Works, Peru, Ind.—Model motors (D-214).

Mosler & Co., A. R., Mt. Vernon, N. Y.— Mosler Spit-Fire spark plugs and other specialties (C—39)

Motometer Co., Inc., New York—Motometers (D—77).

Motor, New York (D-73).

Motor Age, Chicago—Publications (D-- 205).

Motorcycling, Chicago (D-144).

Motor Patents Co., Detroit, Mich.—Speed-ometer drives (D-118).

Motor World Publishing Co., New York (D-173).

Motorcycle Publishing Co., New York D-137).

Motsinger Device Mfg. Co., Lafayette, Ind.

-Motsinger ignition devices and carburetters (C-101).

Mutty, L. J., & Co., Boston, Mass.—Numotor cloth and other automobile fabrics (D-208).

National Coil Co., Lansing, Mich.—National magnetos and other ignition specialties (C.—54).

National Lead Co., New York-Die-cast-

January 8,

ings, paints and electric wire conduits (D-121).

National Metal Molding Co., Pittsburgh, Pa.—Auto-Flex conduit (D—41).

National Rubber Co., St. Louis, Mo.—Narco tire repair material (D—141).

National Tube Co., Pittsburgh, Pa.—National steel tubing (C-53).

Newmastic Co., New York—Newmastic rims and tire filler (D-5).

Niehoff & Co., Paul G., Chicago, Ill.—Tire repair material (D—16a).

Nonpareil Horn Mfg. Co., New York—Pilot signals (D-112).

Noonan Tool & Machine Works, A. S., Rome, N. Y.—Tools and motorcycle accessories (E-5).

North East Electric Co., Rochester, N. Y.— North East electric lighting and starting systems (D-30).

New York Coil Co., New York—Nyco ignition specialties and other ignition supplies (D-68).

N. Y. & N. J. Lubricant Co., New York—Non-fluid oils (C-45).

Overman Tire Co., New York—Overman tires (D-23).

Pantasote Co., New York—Solitaire tops and pantasote fabrics; Agasote fiber bodies (C—32-33).

Para Tire Co. of New York—Para tires (E-7).

Peacock, Clarence N., & Co., New York—Ames shock absorbers (D-75).

Perfection Accessories Co., 796 Seventh avenue, New York—Pedal caps and other supplies (D-74).

Perfection Spring Co., Cleveland, O.—Perfection springs (D—204).

Perkins-Campbell Co., Cincinnati, O.—Seat covers, vulcanizers, steering rod boots, fan belts and other specialties (D—37).

Peteler Shock Absorber Co., New York—Shock absorbers (F-10).

Philadelphia Storage Battery Co., New York—Philadelphia storage batteries (D —88).

Platt & Washburn Oil Co., New York—Lubitants (D-103).

Powers Shock Absorber Co., New York—Shock absorbers (E-6).

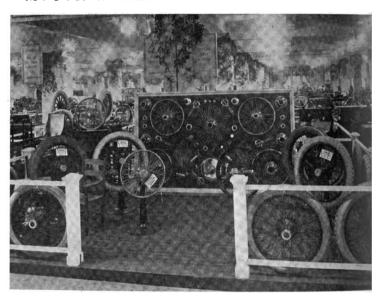
Presto Inter-Rim Co, Boston, Mass.—Presto demountable rims (D-35).

Pyrene Mfg. Co., New York—Pyrene fire extinguishers (D--61).

Prosser Thos., & Son, New York—Krupp steel (D—9).

Randall-Faichney Co., Boston, Mass.—Bline grease guns, Copley leather-packed guns, Blitz spark plugs, Jericho gas regulator, Webster gasolene gauge and Ranfac vulcanizer thermometer (C-90).

Remy Electric Co., Anderson, Ind.—Remy ignition, lighting and starting systems (C -36)



EXTENSIVE DISPLAY OF THE DUNLOP WIRE WHEEL CORPORATION

Rhineland Machine Works Co., New York

—Rhineland ball bearings (D—65-66).

Rich Tool Co., Chicago—Tools and valves (D-20).

Reilly, P., & Son, Newark, N. J.—Fabrics (D-27a).

Roffy-Grace Corp., New York-Electric lamps (D-25).

Rose Mfg. Co., Philadelphia—Neverout lamps and fittings and license brackets C—109).

Royal Equipment Co., Bridgeport, Conn.— Brake linings and other automobile accessories and supplies (C—55-56).

Rushmore Dynamo Works, Plainfield, N. J.

—Rushmore lighting and starting systems and lamps (D—19).

S. & A. Mfg. Co., Boston, Mass.—Quixet monkey wrenches (F-5).

Sager, J. H., & Co., Rochester, N. Y.—J. H. shock absorbers and other automobile specialties (C—102-103).

Schaefer Sales Corp., Detroit, Mich.—The-Tell-Tale gasolene gauge and Kumalong (D-49).

Schwarz Wheel Co., Philadelphia, Pa.—Wood wheels (C—24).

Schrader's Son, A., Brooklyn, N. Y.—Tire valve gauges (C—82-83).

Shaler Co., C. A., Waupun, Wis.—Shaler vulcanizers (C-35).

Sharrer Patent Top Co., Inc., New York—Sharrer tops (D-177b).

Silvex Co., New York—Bethlehem spark plugs and polishes (D-178a).

Simms Magneto Co., New York—Simms magnetos (C—91).

Sireno Co., Inc., New York—Sireno horns (D-119).

Sonneborn Sons, Inc., L., New York—Soaps, polishes and lubricants (D-98-99).

Soss Mfg. Co., Brooklyn, N. Y.—Soss visible hinges and die castings (D-3 Spacke Machine Co., F. W., Indianap Ind.—De Luxe motorcycle motors (201).

Sparks-Withington Co., Jackson, Mic Sparton horn, fans and other specia (C-107).

Spicer Mfg. Co., Plainfield, N. J.—St universal joints (C—67).

Splitdorf Electrical Co., Newark, N. Splitdorf high- and low-tension magnistrating and lighting outfits and of electrical specialties (C-60 and 73).

Springfield Metal Body Co., Springle Mass.—Convertible metal bodies 112).

Standard Motor Parts Mfg. Co., Philiphia, Pa.—Red Devil exhaust horns 7 and 8).

Standard Signal Lamp Co., Bridge Conn.—Direction signals (F-6).

Standard Thermometer Co., Boston, N —Standard speedometers, Ahell pumps, and radiator thermometers 84).

Standard Welding Co., Cleveland, Seamless welded tubing and Stanrims (C-34).

Standard Woven Fabric Co., Framing Mass.—Multibestos brake lining and tion wheel material (D—175).

Stanley, John T., New York—Soaps polishes (D—48).

Stevens & Co., New York—Sundries accessories (D—216).

Stewart-Warner Speedometer Corp. C go, Ill.—Stewart and Warner speed eters, and tire pumps (C—29).

Stewart & Co., New York—Ahco Ford cialties, Allen friction wrenches

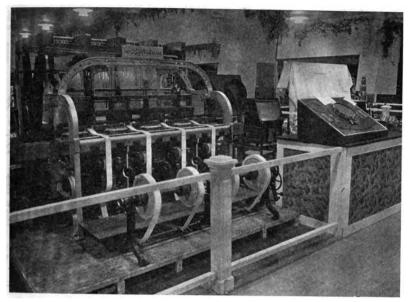


EXHIBIT SHOWING RAYBESTOS BRAKE LINING IN THE MAKING

Gryndyne valve grinding compound (D -50).

Stromberg Motor Devices Co., Chicago, Ill.
—Stromberg carburetters (C—64-65).

Taylor Mfg. Co., Montclair, N. J.—Portable garages (D-15).

Telesco Co., Le, Baltimore, Md.—Le Telesco shock absorbers (D—26a).

Thermoid Rubber Co., Trenton, N. J.—
Thermoid and Nassau tires (D—70 to 72).
Thurber Rotary Starter Co., Detroit, Mich.
—Thurber air starters (D—8).

Tingley, Chas O., & Co., Rahway, N. J.— Vulcanizers and tire repair materials (D—100).

Torbensen Gear & Axle Co., Newark, N. J.

—Torbensen undergeared rear axle assemblies; Bendix automatic starting gears (C—79).

Townsend & Co., S. P., Orange, N. J.— Townsend grease guns (D—95).

Trenton Brass & Machine Co., New York
—Flechter carburetters (D—76).

United & Globe Rubber Mfg. Co., Trenton, N. J.—Globe tires (D—102).

United States Gauge Co., New York City—U. S. tire gauges (D—212).

United States Light & Heating Co., New York City—U. S. L. storage batteries and electric lighting and engine starting systems (C—23-25).

Universal Lubricating Co., Cleveland, O.— Tulc petroleum lubricant (D—34).

Universal Machine Co., Bowling Green, O.

-Ball bearings and three-piece universal joints (D-33a).

Universal Shock Eliminator, Inc., New York City—Universal shock eliminators (D-59).

Vacuum Oil Co., New York City—Mobiloils and lubricants (C-37).

Valentine & Co., New York City—Paints and Valspar varnishes (C-42).

Veeder Mfg. Co., Hartford, Conn.—Veeder odometers, hub odometers, revolution counters (C—40).

Vesta Accumulator Co., Chicago, Ill.— Vesta storage batteries and lighting outfits (C-110).

Voorhees Rubber Mfg. Co., Jersey City, N. J.—Red inner tubes and mechanical rubber goods (D—80).

Waldt, Ralph, New York City—Healey valve seaters, valve spring tools, Koeth's interchangeable tools, Ray socket wrenches, motorists' warm grips, Peerless heaters, Hypo battery connectors (D—209).

Waltham Watch Co., Waltham, Mass.—Automobile clocks (C-74).

Warm Hand Steering Wheel Corp., Pough-keepsie, N. Y.—Electrically warmed wheels (D—35a).

Warner Gear Co., Muncie, Ind.—Clutches, transmissions, Lanchester-Daimler worm drive assemblies (C—31).

Wasson Piston Ring Co., Hoboken, N. J.—Concentric piston rings (D-85).

Wayne Oil Tank & Pump Co., New York City—Storage systems (D—93-94).

Weed Chain Tire Grip Co., New York City—Weed anti-skid chains and Lyon grips (C—63).

Western Electric Co., New York City— —Chauphone telephone system (D—142). Westinghouse Spring Co., New York City— Westinghouse air springs (D—14a).

Westinghouse Machine Co., Pittsburgh, Pa.
—Castings (D—14).

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.—Ignition, electric lighting and starting devices (D—18). Wheeler & Schebler, Indianapolis, Ind.—Schebler carburetters (C-41).

Willard Storage Battery Co., Cleveland, O. —Willard storage batteries (C—75-77).

Willey, C. A., Co., Hunter's Point, N. Y.—Paints and colors (D—25a).

Yale Steel Stamping Co., Oostburg, Wis.
—Yale mufflers (D-15a).

#### Motorcycles

Aurora Automatic Machinery Co., Chicago, Ill.—Thor motorcycles (D-187-189).

Consolidated Mfg. Co., Toledo, O.—Yale motorcycles (D—183-186).

Davis Sewing Machine Co., Dayton, O.— Dayton motorcycles (D—151-153).

Emblem Mfg. Co., Angola, N. Y.—Emblem motorcycles (D—165-168).

Excelsior Motor Mfg. & Supply Co., Chicago, Ill.—Excelsior motorcycles (D—154-159).

Hendee Mfg. Co., Springfield, Mass.—Indian motorcycles (D—124 to 131).

Harley-Davidson Motor Co., Milwaukee, Wis.—Harley-Davidson motorcycles (D —160-164).

Henderson Motorcycle Co., Detroit, Mich.

—Henderson motorcycles (D—190 to 192).

Miami Cycle & Mfg. Co., Middletown, O.— Merkel motorcycles (D—132 to 136).

Pope Mfg. Co., Hartford, Conn.—Pope motorcycles (D—193 to 195).

Reading-Standard Co., Reading, Pa.—R-S motorcycles (D—147 to 150).

Schickel Motor Co., Stamford, Conn.—Schickel motorcycles (D-171-172).

Motorcycle Manufacturers' Association office (D-147).

#### Roberts to Build in West Virginia.

The Roberts Gas & Gasolene Engine Co., which recently was organized with an authorized capital of \$150,000, has elected officers as follows: Leopold Sigwart, president; Eugene Summerville, vice-president; H. P. Kennan, secretary; J. M. Roberts, general manager; Frank Sigwart, superintendent. The company proposes to build a plant in Morgantown, W. Va., and is inviting bids for its construction.

#### Indian Invades Monroe County Garage.

Lester I. Silliman, who operates the Hilton Garage in Parma, N. Y., is the defendant in a suit filed this week in the Supreme Court for New York county by the Indian Refining Co. It is charged that between April 19 and September 7 of this year he ran up a bill of \$146.20 and paid but \$25, leaving a balance of \$121.20, which amount is demanded.

The Doehler Die Casting Co., of Brooklyn, N. Y., is establishing a branch plant in Toledo, O.

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#### KEEPING SALESMEN SATISFIED

Fair and Liberal Treatment of the "Outside" Men and the Results That May
Accrue—Dealer Expresses His
Views of the Subject.

"Everyone hears a lot about selling goods to the public—about winning the friendship of buyers and keeping them satisfied as a prime element in good salesmanship, but there is one thing that many sales managers seem to overlook, and that is the necessity for winning the friendship of the salesman and keeping them 'sold' and satisfied," remarked a dealer a few days ago.

"And yet this is one of the most important and valuable things the employer or sales manager can do. What do I mean? Simply that there are hundreds of salesmen making the rounds and selling cars and accessories and doing fairly well who might do a great deal better with the same expense for salaries and travelling if the man behind the gun expended more time, effort and brains in keeping their friendship, keeping them sold on their goods by giving additional information to that already in the catalog, sending them word of successes at other points, etc.-also keeping them sold on the firm's policy of fairness and liberal treatment and getting the spirit of loyalty implanted so deep in their systems without any apparent effort that no other firm seems quite so good to work for as the one he is working for.

"You say that is the way a salesman ought to feel anyway. But a great many of them have to struggle awfully hard to maintain the feeling. They often possess it in spite of the methods and treatment of the house they work for than because of it."

There is much that is worth thinking about in these assertions. They contain many grains of common sense and point to a subject that can profitably be given

much careful consideration, whether two salesmen or two hundred are employed.

# INVENTORIES OF THE SORT THAT DO PREVENT DECEPTION

Again it is the first of the year. Books are balanced, figures drawn off and statements made? Why? Because the merchant wants to know exactly where he stands and because from time immemorial the first of the year has been considered the date for making this "showdown." Some concerns take an inventory once a year; some take it every six months, others take it oftener, and many concerns keep a running inventory which shows all the time exactly where they stand.

#### Be Fair and Honest in Valuations.

Whatever your custom, let your inventory be frank, square, honest in its valuations. The custom sometimes prevails of forgetting depreciation charges and permitting inflated values in order to make a good showing. But don't do it. Nobody is ever greatly fooled—not even yourself—and the merchant in business does not want pleasing statements if the facts are otherwise. What he wants is rock-bottom facts. Nothing else will do if business is to be on a solid basis.

#### GETTING BUSINESS BY GOING OUT AND SOLICITING FOR IT

There is a tire and accessory firm in a Western city that has been in existence only about four months, and yet it is doing a business that in volume and profitableness would put many an older concern to shame.

"How do we get it?" repeated the proprietor, who, by the way, came from an entirely different field. "We go after it. Instead of sitting in our store like our competitors we go out after business and solicit the best firms in their own offices; also the Police Department, Board of Public Works,

and Park and Boulevard Commission. It is business that runs into money. We went right after it and showed them why our service was better, quicker, more satisfactory in every way, and we have business not only on repairs but on tires as well. We do not get it all, but we get some; there are a dozen concerns that do not get any of it. They never went after it.

#### Service and Prompt Attention Count.

"Then, note these people: Here is a bill I am sending to one of the largest lumber manufacturers in the country; he has severa! trucks and two or three cars, besides his own personal cars; I get all the business. Then, we have business from nearly 40 similar people and we get it all. Previously, their drivers bought wherever their fancy dictated; now they are under instructions to buy here. It is all good pay and at regular prices; our only inducement is service and personal attention. We solicit the business of these people and therefore they know it will get attention because they know we want it.

"How much of it would we have had we sat in our store and waited? Not a dollar's worth, I should say."

# FRANKNESS ABOUT REPAIRS THAT HOLDS TRADE AND REPUTATIONS

If you accept a repair job and for any reason are not able to do the work in the time specified, tell the car owner the reason before he takes the car out. Don't let him get on the road and there find that the job had not been done. It doesn't help you a bit; instead, it works positive injury.

There may be a very good reason for your not completing the work; materials may not have been in stock; unexpected angles may have developed, but, whatever it is, tell the customer before he leaves your place. It is far better than having him tell someone else what careless, thoughtless folks you are and why.



#### WHEN "CREDIT REPAIRS" FIT

Big City Dealer Who Says His Customers
Would Not Consider Paying Cash—
Why the "Charge Accounts"

Often Are Desirable.

"The idea of getting cash for repairs advocated in several recent issues of the Motor World in the columns of the Wide-Awake Merchandising Department is all right for the small town dealer or the dealer in certain localities; but it would not work a minute in a strictly high-class neighborhood where a garage looks entirely for its revenue from the really wealthy classes," said a dealer in a big Eastern city.

"Our dealings are in the vast majority of cases with people who employ chauffeurs. Imagine, if you will, the difficulties that would arise if we insisted on cash from these patrons. It would upset calculations entirely and offend more people than I would care to count, for if there is one sure way of raising a storm, it is to question a man's or a woman's credit.

"Car owners do not care to trust chauffeurs with their purses, and it is impossible to say in advance what repairs are going to cost, so what can we do? Indeed, instead of demanding cash, we solicit responsible people to open accounts with us for repairs, tires, gasolene and oil, and anything and everything they may want in the automobile line. We want their trade and we find that having so many accounts does not inconvenience us in the slightest. On the contrary, we consider it mighty good business; for, when people have a charge account it means that we will get most of their trade instead of having it split up all over. The big department stores discovered that long ago and their competition for charge accounts is very keen and very earnest."

So it appears that, as in most matters of policy, one plan or method does not fit all

conditions and one has to adjust his ideas to the class of people among whom he can build the most profitable trade.

## LINKING SLACKNESS OF SALES WITH LACK OF REAL RECORDS

Business suddenly slumped with a certain dealer. The sales manager of the factory happened to call. "What's the matter?" he inquired. "Oh, nothing doing; nobody's buying; that's all," responded the dealer.

"Where's your prospect list?" asked the sales manager.

"Prospect list?" queried the dealer. "Do you mean a card file? I haven't got one. Haven't had time to make one this year, and last year's list disappeared about the time I fired that crazy salesman."

"Well, how do you know you've got all the business if you don't know who all your prospects are? If you are attacking an enemy you must know how many there are and where they are," continued the Sales Manager. And then and there he proceeded to give that dealer some new views on the value of an up-to-date, carefully kept record of possible buyers.

This sounds as if it might have happened four years ago; but it happened only two months ago. Some dealers still keep records in their heads.

# TURNING THE "MARKED DOWN" SALE TO JANUARY ADVANTAGE

In every city shortly after January 1st you hear of January "marked-down sales." Furniture, clothing, dry goods, hardware, almost everything is "marked down" so as to turn goods into cash and leave as little merchandise on hand as possible when the annual inventory is taken.

What is the matter with the automobile dealer inaugurating a special January sale of odds and ends that have accumulated during the year? Every establishment of any size has hundreds of dollars tied up in

odds and ends that might far better be turned into cash, even if a slight sacrifice is necessary. Why could not the January "mark-down" idea be applied to these items with a view to a quick clean-up?

Think it over and formulate your own plan; but get action.

#### APPROACHING PROSPECTS FROM RARELY CONSIDERED ANGLES

The thoughtful salesman is always thinking over his proposition with a view to discovering some new avenue of appeal to the purchaser. A New Jersey dealer succeeded in selling a low-priced light car to hundreds of owners of large, expensive cars by arguing to these men the economic advantages of a light car of his type used cooperatively with the large car. Many other dealers neglected the high-priced trade altogether with this car. He cultivated it and made a tremendous asset of it.

A salesman for a certain type of shock absorber discovered that his device saved tires as well as adding comfort, and when the comfort argument did not prove effective he emphasized the tire-saving feature and effected many sales. Another dealer found that he had been selling a great many people of wealth and standing in the community. He immediately made capital of the fact and it served to attract others.

The idea is to keep analyzing, keep studying your proposition, knowing that there is always some one thing that has never yet been discovered, some new point or some new avenue of appeal. It amounts to the same thing in the long run. It means more customers, more business.

It is much pleasanter telling how you succeeded in getting a thing done than explaining why you failed. If you have anything to do, do it. Do not waste time worrying over the method of doing it; get it done.

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#### MOTOR WORLD

# M. A. M. RE-ELECTS FOSTER AND ALL HIS COLLEAGUES

Men Who Brought Organization to Top Notch Are Retained—Annual Banquet Marked by Absence of Speeches.

Thoroughly satisfied with the men who served the organization during the past twelve-month, the Motor and Accessory Manufacturers, Inc., at their eleventh annual meeting in New York today, reelected their entire board of officers, as follows:

President, J. H. Foster, of the Hydraulic Pressed Steel Co.; first vice-president, F. Hallett Lovell, Jr., of the Lovell-McConnell Manufacturing Co.; second vice-president, C. E. Whitney, of the Whitney Manufacturing Co.; third vice-president, F. C. Billings, of the Billings & Spencer Co.; treasurer, L. M. Wainwright, of the Diamond Chain & Manufacturing Co.; secretary and assistant treasurer, Alfred P. Sloan, Jr., of the Hyatt Roller Bearing Co.

Almost needless to say, W. M. Sweet was retained as manager.

The general meeting of the organization was held yesterday (Wednesday), at which time the four three-year directors whose terms expired were chosen to succeed themselves. They are J. H. Foster, of the Hydraulic Pressed Steel Co.; H. E. Raymond, of the B. F. Goodrich Co.: T. J. Wetzel, of the Spicer Mfg. Co.; C. W. Stiger, of the Stromberg Motor Devices Co.

Three applicants were elected to membership, as follows: American Sheet & Tin Co., Pittsburgh, Pa.; Geuder, Paeschke & Frey Co., Milwaukee, Wis., and Champion Machine & Forging Co., Cleveland, O. These accessions bring the membership to 268, which stands as the highwater mark.

In addition to its membership, the M. A. M. continues to flourish financially, its surplus still exceeding \$100,000.

Expectations that the subject of future shows would be discussed and the attitude of the organization be newly defined proved vain. The matter, it is stated, was not mentioned

The annual banquet of the association at the Waldorf-Astoria, which for six years has been the crowning social feature of the New York show week, occurred last night (Wednesday), and was as numerously attended as were its predecessors, approximately 400 members and guests being seated at the forty-nine tables. For the first time, however, and due to the death of his son-in-law, Col. Geo. Pope, chairman of the Chamber of Commerce's show committee, was not among those present and the warm and remarkably enthusiastic reception which

in other years always was accorded him, found no one on whom to spend itself. In that and some other respects the banquet was not like those that have gone before. One of the "other respects" was the total absence of speakers and of the table of honor. But one short address was made and that by J. H. Foster, president of the M. A. M., who merely welcomed the assemblage in the usual few well chosen words. Instead of speakers there were singers and dancers and the music which usually accompanies them. If there was any particular star of the evening it was probably Anna Held's daughter, who was one of those who made up the vaudeville program.

#### Vanderbilt and Grand Prize Races go West.

It now is certain that the Vanderbilt and Grand Prize races will be run west of the Mississippi, after all. Following negotiations between Leon T. Shettler, vice-president of the Western Automobile Association, and the Motor Cups Holding Association, which has the disposition of the Vanderbilt, and the Automobile Ciub of America, which has the disposition of the Grand Prize, it has been definitely decided that both races be run over the Santa Monica course in California, the speed of which on more than one occasion has been demonstrated.

The A. C. A. already has granted a sanction for the Grand Prize, and though no sanction has as yet been issued by the Contest Board of the American Automobile Association for the Vanderbilt, it is confidently expected that it will be issued within the next week. The date for the Grand Prize race has been set as February 21st, which is a Saturday, the Vanderbilt being run the following Monday, February 23rd.

#### Preaches Sermons on Motor Car Topics.

Rev. H. Lester Smith, pastor of the Central Methodist Church, of Detroit, is preaching a series of sermons on subjects pertaining to automobiles; the first one, December 28, was "How an Automobile Is Like a Man." The second, last Sunday evening, was "Are You a Back Number or a 1914 Model"; next Sunday he will speak on "A Man With a Flat Tire." January 18 the topic will be "Do You Drive Your Own Car or Have You a Chauffeur?"

#### Preserving Spare Tires from Wear.

Where spare tires are so supported that their weight comes on the tires themselves rather than on the rims, as is the case with most of the more modern supports, it is a good plan to place small leather pads between the tire and the carrier. Pads of the kind will prevent the continual vibration wearing slight ridges in the tread.

### KENNERDELL MADE CHAIRMAN OF A.A.A. CONTEST BOARD

Succeeds William Schimpf, Who Refused Reappointment, and Will Serve Without Pay—Director Heyl is Dropped.

Carrying out his announced intention, Wm. Schimpf, who for the past two years has served with credit and without pay as the chairman of the Contest Board of the American Automobile Association, declined reappointment to the post, and at the meeting of the executive committee of the A. A. A. which was held at the Waldorf-Astoria in New York on Monday, 5th inst., President John A. Wilson appointed Richard Kennerdell, of Franklin, Pa., to succeed him; following the precedent established by Schimpf, Kennerdell, too, will serve as an amateur, which is to say he will serve for love of the sport and without salary.

Although it has been unofficially announced that Amos G. Batchelder, who is chairman of the executive committee and already has his hands full, has been appointed head of the Contest Board, such is not the case, the error being due, according to Batchelder, to a confusion of names in a telephone communication.

Although Kennerdell is practically new to Contest Board matters, his experience with the A. A. A. is long and varied. For several years he has been a director and a member of the executive committee. Although his interests are extensive, and have to do principally with the oil business, with which he has been intimately connected for a number of years, they are not such as make great demands upon his time, and it is expected that he will be able to devote considerable time to traveling.

Next to Kennerdell's appointment, was the development that A. B. Heyl, the Cincinnati physician whose unsupported accusations against nearly every one connected with the A. A. A. raised an uproar at the annual meeting, in Richmond, Va., had been dropped from the board of directors; he had been charged with "treason." but no one heard him drop. The Ohio association has been asked to name someone to take his place.

Outside of regulation routine business, the National Good Roads Board was empowered to hold a Federal aid conference in Washington, in connection with the National roads legislation, and a committee was appointed to prepare for a midsummer meeting in the White Mountains. The committee consists of Chairman Batchelder, L. R. Speare and S. A. Miles.

# ULINE-KNIGHT MOTOR TEST FENDS WITH FLYING COLORS

pection Reveals Perfect Mechanical fondition—Little Power Variation and No Trouble—Special Efficiency Tests Follow.

Without a stop, without a hitch, without a the necessity for changing a spark as, the four-cylinder Moline-Knight mothat started on its endurance run in the C. A. laboratory on Friday evening, tember 19, at 7:01 o'clock, ran until Jany 2, a total time of two weeks, or 336 as. And not only did the motor run tinuously, but it was just as good at the as at the beginning, mechanically. It staken apart and examined before and it the tests, and to all intents and purses there was no difference in the condition of the wearing surfaces.

The average power for the entire run was 13 horsepower, and the minimum for any iminute period was 36.4 horsepower. The wottle was wide open throughout the test 16 the dynamometer load was so regulated 16 keep the speed at an average of 1,117 prolutions per minute. Neither the ignition 17 the carburetter adjustments were 18 the engine finishing with the spark 18 ming and the gas supply exactly as at the 18 period was 19 period was 1

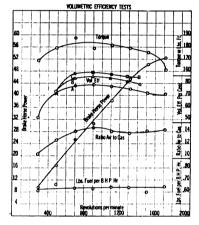
#### Gasolene Pipe Springs a Leak.

At the conclusion of the 336 hours of the ipulated test the motor was speeded up ithout having been stopped, and for one our was run at an average speed of 1,678 evolutions per minute, averaging just 53 orsepower. As is already known to Motor orld readers, the motor has a bore and troke of 4 and 6 inches, respectively, and rated, according to the usual formula, 22.6 horsepower. The Moline company marantees it to deliver 50 horsepower, owever, and the run at the conclusion of e endurance test certainly bears out the ompany's faith in what the motor will do. While the matter of fuel consumption in nch a test is by no means paramount, it alays is interesting to see what the figures re. The total quantity of gasolene conamed by the Moline-Knight was 10,645 ounds, or 1,744 gallons. Unfortunately, brever, these figures are not correct. At he conclusion of the test it was discovered hat a small hole had been chafed through he fuel supply pipe where it touched the mankcase, and there was leakage that intheased as the hole increased in size. The haporation of the fluid by the blast of coolng air prevented the discovery of the leak. the records show, however, that the fuel

consumption gradually decreased for the first 160 hours, after which it increased steadily up to the conclusion of the run, the inference being that it was at or about the 160th hour that the leakage commenced. The average consumption for the time when, presumably, there was no leakage, was 31.5 pounds per hour, and for the last 10 hours of the 160 it was 30.8 pounds per hour, showing a very decided decrease in the amount of fuel burned per hour. The unfortunatea leak doubtless interfered with a more or less continuous reduction for the whole run. The gasolene was taken from the same source as the A. C. A. garage supply, and tested 61.6 Beaume, or .733 specific gravity, at 60 degrees F.

#### Consumption of Lubricating Oil.

The total quantity of lubricating oil supplied to the motor was 170 gallons. During



MOLINE-KNIGHT EFFICIENCY CURVES

and following the test 7 quarts were taken from the motor, and throughout the test there was an overflow from the main bearing at the flywheel end that was measured and found to be about .87 pints per hour. After making all deductions, the motor is found to have consumed 131.6 gallons of oil. That the lubrication was ample is indicated by the fact that during part of the test the exhaust was slightly smoky. The oil was a special compound supplied by F. H. Floyd, of Detroit, who stated that it was a mixture of Russian and domestic stock.

#### Power and Fuel Economy Trials.

Prior to and following the endurance run, a series of short runs were made with wideopen throttle and spark set for maximum power in order to determine the power, friction and fuel consumption at various speeds. The carburetter adjustment was the same as during the main run. The maximum brake horsepower was 53.6 at 1,682 revolutions per minute.

As no attempt was made to cut down the fuel consumption during the endurance run, special fuel consumption tests were made afterwards. The carburetter was readjusted and the motor given a five-hour run at an average speed of 1,114 revolutions per minute, besides a series of shorter runs at different speeds. The average brake horsepower for the five-hour run was a little higher than for the main run, being 39.8 as against 38.3. The average fuel consumption was .63 pounds, or .103 gallons, per brake horsepower hour. This shows a marked difference from the figures for the first 160 hours of the test. The average fuel consumption for this period was 31.9 pounds per hour, while the figure for the economy test was 25 pounds per hour, the horsepower for the latter being slightly the highest.

Following the fuel efficiency test and without change of adjustment, the carburetter was enclosed in an air box which was clamped on between the carburetter flange and the inlet manifold. The only air intake to the box was piped to a Venturi air meter and test runs were made under the following conditions: (a) Carburetter in place, motor running under its own power. (b) Carburetter in place, motor driven by dynamometer. (c) Carburetter removed, motor driven by dynamometer. The results of these tests are shown in the accompanying chart.

#### No Trouble Except from Fan Belt.

The only semblance of trouble was with the fan, which stopped after 131 hours because of slipping belt and gummy oil. The bearing was cleaned and the belt replaced, but later loosened and hit the fan blades and jumped off. In putting on a new belt the rim of the pulley broke; the whole fan was removed at the 182d hour. Later a new fan was put on, but the belt jumped off after ten minutes' running and thereafter no fan was used.

Cooling throughout the test was by thermo-syphonic action, for which the motor is designed. Sufficient cold water was added to that in the tank to maintain an average temperature of 85 degrees for the water entering the motor jackets. The average temperature of the water leaving the motor was 166 degrees.

The dismantling of the motor at the end of the test revealed conditions that were extremely satisfactory. There was no perceptible wear on the bearings, sleeves or other parts. The slight irregularities in the sleeves were built up with carbon to form close fitting, glossy surfaces. The ports in the sleeves were not burnt, and there was only a very slight deposit of carbon on the port edges. The cylinder heads and the tops of the pistons showed only a very thin

coating of carbon and only very small quantities of carbon were found elsewhere. No shake could be felt in any bearing and there was every indication of perfect lubrication. All the piston rings were perfectly free. The condition of the bearings is particularly interesting in view of the fact that the main bearings, which are lubricated by a pressure feed, have no oil grooves, the shafts floating on what are virtually oil films.

The ignition was furnished by a Bosch DU model 4A Duplex magneto and the plugs were also Bosch, of the heavy duty type with three points. Though the electrodes were partly burned away at the end of the test, slightly increasing the gap, there was no missing or irregularity in the firing, which was notably good throughout the run.

The carburetter was a Schebler model R, which has a tapered needle, the position of which in the spray nozzle is controlled through a lever connection, by the position of the air valve. The carburetter required no adjustment and no attention at any time during the run, and to it and the ignition apparatus is ascribed no small share of the success of the test.

#### Bicycle Lamps that Saved a Situation.

Electric lamps and lighting systems do not often give trouble, and even when they evidence some sort of derangement it generally is possible to remedy the trouble by the exercise of a little ingenuity. One motorist, for instance, whose dynamo went "dead" and permitted his battery to run down worked his way home, slowly but surely, by the light of a couple of cheap bicycle lamps purchased at a wayside bicycle sundry store. At the garage it was a simple matter to ascertain that one of the brushes in the dynamo had worn so short that it did not make perfect contact with the commutator. The insertion of the new brush took about five minutes' time and the bicycle lamps are stored in the tool kit for future emergencies.

#### Tire Carriers that Should be Watched.

It scarcely can be viewed as good practice to attach spare tire carriers to the backs of tonneaux with ordinary wood screws, for vibration is reasonably certain to loosen them in time, and unless the tires are fastened with straps to some other part of the car they will drop by the wayside "unbeknownst" to the owner. Where wood screws must be used, they should be thoroughly wetted with water before they are inserted and they will then rust in place and be much less likely to work loose. In any case, such screws should be examined from time to time to make certain that they are firm in their holes.

# FIGURING ENGINE RATING BY MENTAL ARITHMETIC

Pacific Coast Dealer Evolves Greatly
Simplified Method of Applying A.
L. A. M. Formula—Applies
Only to "Fours."

As simple as is the A. L. A. M. formula for obtaining a comparative indication of the power that should be developed by a given engine, its use nevertheless entails something more than mental arithmetic-at least to the average mortal. The result obtained through the use of the formula, which as probably nearly every one knows is D x N divided by the constant 2.5-D representing the diameter of the piston and N the number of cylinders—is chiefly useful merely for comparative purposes and to make the comparison very much easier than heretofore has been possible, H. F. Markworth, of the Howard Automobile Co., of San Francisco, Cal., has evolved a simple method of obtaining the same result as that obtained with a pencil and paper and the A. L. A. formula that will scarcely tax the mental capacity of any one.

Markworth's method, briefly, is to reduce the bore of one cylinder to quarters of an inch and to square the figure thus obtained; placing a decimal point at the right of first two figures gives the A. L. A. M. formula rating directly. For instance, suppose the bore to be 334 inches, which is equivalent to 15 quarter inches. Squaring 15 gives a product of 225 and placing the decimal point at the right of the first two figures gives 22.5, which is the A. L. A. M. rating for a four-cylinder engine of that bore.

Where the bore is expressed in inches and eighths, the method is the same, except that the bore then is reduced to eighths, the total number being squared, and the result divided by four. Taking a bore of 4½ inches, for example, the total number of eighths is 39. If this is squared the result is 1,251. When this is divided by four and the decimal point placed at the right of the first two figures, the result is 38.025 horsepower. The method, quite obviously, is applicable only to four-cylinder motors.

## Strong Headlights Championed in St. Louis. While most of the sixty of the strong transfer o

While most of the cities in the United States which have paid any attention at all to the headlight question have instituted measures for the suppression of strong lights, the St. Louis Business Men's League has set itself in a class of its own by taking an uncompromising stand for the strong headlight.

The sub-committee of the motor section of the league investigated the question and

reported: "We find that where the stree are adequately lighted the motor car her light is not blinding, though it burn at highest capacity, and that, where the stree are not adequately lighted the headlight high power is indispensable. Our recomendation is that instead of forbidding the use of electric lights an ordinance shound be passed requiring all machines to equipped with strong lights."

#### Taximeter Company Buys Trouble.

When the American Taximeter Co., New York City, entered into the affairs the Delivery Supervision Co. it was paring future trouble for itself, even if was not foreseen at the time; followin the bankruptcy of the Delivery Supervisic Co., in which the Taximeter company we the heaviest creditor, the assets of the famer were bought by the latter for \$12.0 at a sale held December 9, but various of structions have been placed in the way sin the bankruptcy began.

The Regina Co., of Rahway, N. Y., sue in the Federal Court in New York to efforce a rather large claim and this we in the Supreme Court for New York courty two more suits were filed against to Taximeter concern; they center large around the claim that some months before the bankruptcy the Taximeter companiassumed the liabilities of the Delivery Suprevision Co.

One of the latest suits is by the Bostot Delivery Supervision Co., which leased Re cordographs in Boston; it claims that sing the Taximeter company bought the banbrupt's assets it has failed to resognize the Boston concern's contract and is demanding exorbitant prices for its Recordographs. This, the complaint states, makes a profit able business difficult, if not impossible, and the court is asked to make the Taximeter company continue the contract as before It also asks for \$1,564.17, which it stated was collected for it by the Delivery company but was never turned over.

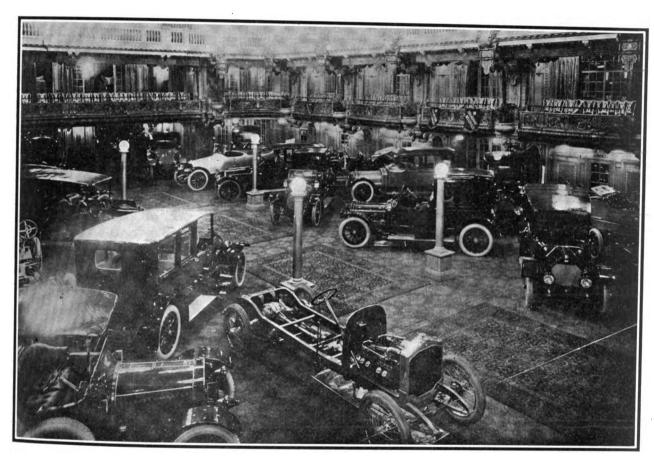
Henry S. Mott is the complainant in the other action; he charges that he holds notes against the Delivery company to the extent of \$11,000 and asks judgment for that amount with interest.

#### Necessity for Testing Lifting Jacks.

When taking delivery of a new car it is a wise precaution to make sure that the jack is really serviceable; to see in other words, whether the jack will fit the car; whether it really can be placed beneath the axle. For it should be remembered that with the growing practice of slinging rear springs beneath the axles the space where a jack can be placed is considerably less than where the springs are clipped on above the axle.

# GLORY OF IMPORTERS' SALON PARTLY AMERICAN

Domestic Products Loom Large Among Cars from Other Countries—Electric Starting and Lighting Firmly Established in Foreign Cars—Few Important Changes in Imported Chassis or Bodies.



GENERAL VIEW OF THE IMPORTERS' SALON IN THE GRAND BALLROOM OF THE HOTEL ASTOR

As a creator of pleasurable sensations, as an arouser of esthetic appreciation, as an example of Art-with a big A-applied to the exhibition of automobiles, the combination formed by the cars shown at "The Automobile Salon, under the auspices of the Automobile Importers' Alliance, Inc.," to use the whole title, and the grand ballroom of the Hotel Astor is-well, it is what it always has been since the importers began showing in that sumptuous place. Superlatives have become unnecessary and one refrains from applying them to the cars and to the ballroom just as one refrains from explaining that Michael Angelo was an exceptionally talented artist.

As to whether the foreign atmosphere that the Salon has made famous is due wholly to foreign causes, so far as the present show is concerned is more or less open

to doubt. True, there are foreign cars, and foreign names, and foreign faces, and foreign accents, all very much in evidence; but a round or two of the show inevitably leads one to wonder if it is not possible to have a thoroughly foreign atmosphere without very much in the way of a foreign foundation for it. The Hotel Astor is American enough, and so are the people who examine-and buy-the cars. Two prominent exhibit are of American cars-the Simplex and the S. G. V.—that ask for no handicap from the importations; they even have that "indefinable something" that is the outward and visible sign of excellent inward workmanship. The greater part of the foreign-looking bodies are the products of American builders; such names as Brewster, Cole, Healy, Holbrook, Moore & Munger and Woop cannot be said to heighten the foreign flavor much. What is there to distinguish them from the best of the foreign bodies? You have to shake your head and give it up—though there is no denying the lessons learned from artisans across the sea.

And there are the American starting and lighting systems. The wedge was entered at the last Salon, and in the present show the name Rushmore is found to be coupled with Lancia, De Dion, Mercedes, Isotta-Fraschinni, Delaunay-Belleville—and the American starters turn over the foreign motors just-as merrily as they do just plain American motors.

Of course, with the exception of the two home makes mentioned, all the chassis at the Salon are imported—even the Fiat, of which none of the Poughkeepsie models are shown. Also, there are several imported



DE DION FOLDING SEATS

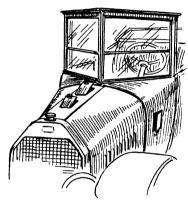
bodies and a few imported ways of doing things. It is apparent, however, that the Importers' Salon is becoming Americanized without losing any of the charm of its foreign flavor, which may be just another way of saying that it is becoming a pot-pourri of what is best from both sides of the big water, each element bringing out what is best in the other and neither losing anything through association.

There are two more exhibitors this year than there were last year, there being 12 in all, as against 10 in 1913, to say nothing of an accessory exhibitor, A. J. Picard & Co. Five cars that were shown last year are missing—Austrian Daimler, Keeton, Metllurgique, Panhard, and Renault; but, on the other hand, there are six that were not at the last Salon—Simplex, S. G. V., Peugeot, Delaunay-Belleville, Bugatti and Marshall-Arter. Both the latter are of the light car type that is attracting much attention abroad, though they are by no means in the cyclecar class.

#### Will Import Nothing But "Eights."

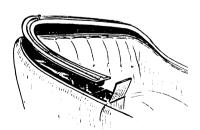
While six cylinders are about as many as most manufacturers seem disposed to put on their motors, either at home or abroad, the De Dion people are a notable exception. with their eight-cylinder V-type motors that now are built in 20, 30, 50 and 100 horsepower models. And while it seems sufficiently significant that Emanuel Lascaris is showing only 8-cylinder models-barring a solitary "four" that was put in because it has a rather striking body that is good-looking despite the fact that it is all angles-it was almost startling to be told that hereafter Lascaris's importation would consist wholly of 'ei'ghts"-a new term?-except where someone wants a smaller car than the smallest "eight." when the desired machine will be especially imported. The question: Are there any more cylinders coming? cannot be answered by referring to 12-cylinder racing machines or to aeroplane motors. Time will tell.

Speaking of V-type motors, there are two cars in the Salon that have four-cylinder V-type motors and not one person in a hundred of those who see them know it. They are the little Lion Peugeot cars, and the motors have four cylinders cast in a single block. The motor is a puzzle to look at. It is square on top with a spark plug in each corner, so to speak, and is so compact that it has more the appearance of a twocvlinder than a "four." A Peugeot feature that is more whimsical than anything else is the ornamenting of the worm-driven town car with a pair of headlights representing lion's heads-real fierce-looking fellows, too. They earned for themselves the appellation "gargoyles" and it fits to a T.

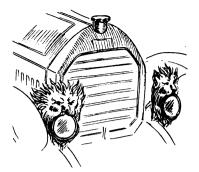


S. G. V. COLLAPSIBLE COUPE

Of the things that first catch the eye there were several, though they are in all cases in the nature of body work and not in the chassis construction-unless exceptions are made in favor of the huge 120horsepower Isotta-Fraschini chassis that is set in the lobby of the Hotel Astor, or the eight-cylinder worm-drive De Dion chassis that is on the other side of the entrance, both of which were features of the last Salon. Another Isotta-Fraschini chassis has a body which, for all the hugeness and power of the motor, is of the two-passenger roadster type and is finished in white. Another novelty that has advantages that are more substantial than mere "difference" is the collapsible coupe body mounted on an S. G. V. chassis. The body is a two-seater



DE DION TOP HOUSING



PEUGEOT "GARGOYLE" LAMPS

with a folding top, and its unusualness lies in the fact that it has a permanent front structure that is best described as being two adjustable windshields set at an angle to each other and forming a pointed front; at the top the angle is filled with a built-in filling, to which the top attaches when drawn forward. The lines of the hood and the cowl conform very well with the peculiar glass structure above.

#### Seats and Tops That Disappear.

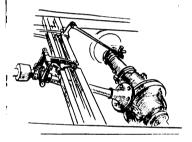
One of the big De Dion "eights" with a 50-horsepower motor has a body that is highly ingenious, though at first glance it does not appear to differ from the usual type of high-class imported body. While there is no top in evidence, investigation reveals the fact that there is one, neatly folded into a space between the back of the rear seat and the back of the body; the edge of the top forms a closure and a finish for the opening, and so cleverly is the design worked out that there is no appearance of clumsiness to the arrangement. True, the space required for the top has to come from somewhere, and the rear seat accommodates but two persons: but there is a strong tendency to build these big cars with oceans of room for their passengers. Besides, there are folding seats for two more persons, and these seats need at least as much looking for as the top. As a matter of fact, they are folded into spaces in the back of the front seat, and the spaces are closed by covers made and operated exactly like the covers of roll-top desks. The whole arrangement is neat and convenient in the extreme.

A huge Mercedes with a dull-finished aluminum body has a similar disappearing top arrangement, and an endeavor made by a Motor World man and an artist to secure a sketch of the body was the signal for an outburst of disapproval that was ludicrously out of place in a modern automobile show. The top had been propped up two or three inches to afford a view of the opening, and the sketch commenced, when an official bore down on the Motor World pair and, snatching the prop from

nder the top, demanded, in a voice tremling with rage, what they meant by it, and they didn't know any better than to do uch a thing, requested them to "get out" nd wound up by the emphatic admonishent: "Remember that this isn't an Ameran show, where you can do as you damned lease!" Apparently it is some such crime "lese majeste" to pry into the secrets(?) a Mercedes car, for the exasperated geneman volunteered the information that on e previous day he had been reluctantly preed to "shoo off" another artist. The mny side of it is the declaration that the how is "not an American show," though this particular case an American firm is phibiting in an American place a car with n American body—and to be sold for merican money.

#### Boat-like Bodies of the Bugattis.

Coming down from big cars to little ones, the visitor entering is invariably stopped by the Bugatti cars at the right of the en-

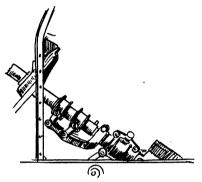


MARSHALL-ARTER REAR AXLE

trance. They are of the light car type, with four-cylinder block-cast motors measuring, so far as bore and stroke are concerned, 65 x 100 millimeters, or 2 9/16 x 3 15/16 inches. The valves are overhead and are driven by a camshaft rotated, in turn, by a vertical shaft, all the gearing being enclosed. Transmission is through a disk clutch running in oil, a four-speed selective-ly operated gearset and shaft to the live rear axle. The wheels, of wire, are 28-inch with 3½-inch tires, and the wheelbase is 9½ inches.

The body of the car, however, is the striking feature; it is very low and distinctly beat-shaped, with a small oval radiator and a rounded back that strongly suggests a boat's stern. The front seats, set staggered, accommodate two, while there is 190m for a third in a rear seat. On either side of the rear seat are storage spaces entered through flush covers that form safety treads for getting in and out-there are no doors, owing to the low build. The Rasolene tank is carried under the body at the rear. The mudguards are very wide and are strongly suggestive of the "wings" of the "Terraplane" of the last Salon, extept that instead of being rounded on top they come to an angle that adds to the decidedly distinctive appearance of the machine. A larger model for four passengers is built on a chassis that is the same except that it is 5½ inches longer as to wheelbase.

Another light car, represented only by a chassis, however, is the Marshall-Arter. This machine has a wood frame with steel flitch-plates, and the motor, a four-cylinder block-cast machine of the high-speed type, carried in an angle steel sub-frame. Drive is through a leather-faced cone clutch, a long strip of flat spring steel enclosed in a tube, and a short tail-shaft to the rear axle; the spring shaft is allowed fore-and-aft motion at the front to permit twisting and cushion-



LANCIA ADJUSTABLE COLUMN

ing the drive, and there is a universal joint between the forward and rear sections of the propeller shaft system. The changespeed mechanism is of the spur gear type and is entirely enclosed in the axle housing, which, rather curiously, is of aluminum. The springs are quarter elliptics all around.

#### One Chassis That Is Brand New.

A new Lancia chassis, shown stripped, is an exceedingly handsome piece of work and embodies several features that are interesting both for their unusualness and for their practicability. The machine is in reality a development and an enlargement of the 30-horsepower model, which has cylinders measuring 100 x 130 millimeters, or 315/16 x 51/8 inches, and the general design, including the block casting of the four cylinders of the motor, is the same. The cylinders measure 110 x 130 millimeters, or 415/16 x 51/8 inches, and the cleanness of its design and the absence of clutter are noticeable features of the power plant. The gearset, providing four forward speeds selectively controlled, is bolted to arms that extend to the crankcase, forming a unit power plant. Direct drive is on the fourth speed; in the small Lancia chassis with 15-horsepower motor the four-speed gearset has two direct drives-one on the third speed and the other on the usual "top."

Conventionality in brake construction apparently has not worried the designers of the Lancia cars in the least, as is indicated by the fact that the foot brake of the new model chassis is of metal construction throughout. The foundation is a steel band. To this is attached the lining, which is not of fiber, or any such material, but of cast iron, put on in sections. Outside of everything is a length of roller chain anchored at one end and attached to the control lever at the other. The picture shows the general arrangement clearly and makes plain its radicality.

#### Lancia Features That Are Unusual.

When the brake is applied by pressure on the pedal the chain contracts the steel band and causes the lining to hug the drum throughout its circumference, thus making the whole of the lining effective. The flexibility of the chain and the spring actiton of the band combine to make the action exceedingly satisfactory. A simple hand-nut



LANCIA CHAIN BRAKE

is provided for making the adjustments necessitated by wear.

In order to make the rake of the steering wheel column adaptable for any type of body, it is made adjustable, there being three positions varying from the very low angle that permits the driver to sit almost on the floor, as in a racing machine, to the opposite extreme, where a fat chauffeur has to drive a high-seated limousine. The column carries a bronze arc which slides in an aluminum housing in the dashboard, the radii of the two being the same, of course. A bolt passing through any one of three holes in the arcs holding the column in the desired position, and the change can be made in a very few minutes. Incidentally, the dashboard and its supporting brackets are cast of a single piece of aluminum, the adjusting arc for the steering column being integral with it. The column hinges on the worm shaft. The wheelbase of the car is 132 inches. The front axle is of U-section, as is also the axle of the 30-horsepower model; the smallest car-15 horsepowerhas the conventional I-beam front axle. Rushmore starting and lighting equipment is fitted; all the electrical light controls are concentrated in a housing in the center of the steering wheel, while the electric starter control is through the usual pedal. Any light or any combination of lights can be obtained by turning a serrated know on the control housing.

Chain drive is one of the mechanical features that the Salon perpetuates, for the Mercedes and Isotta-Fraschini cars, among the foreigners, show final drive by chains—always enclosed—while one of the American exhibitors, the Simplex, shows a chain drive chassis, a feature of which is the outside adjustment for the distance rods. The forward ends of these rods enter housings which project forward of the chain cases. By removing the housing or cap, the screw adjustment of the rod is accessible, and it is stated that adjustment is made more quickly and more easily than with an open chain and the usual type of adjuster.

World. Briefly, the gears are slid into and out of mesh by means of solenoids or hollow magnets energized by pressing buttons mounted on the steering wheel. There certainly appears to be no lack of appreciation of the advantages of the system at the Salon, and there is some surprise because the electric gearshifting apparatus does not add a mass of complication to the chassis. The S. G. V. is built in one chassis model, and upon this the various bodies are mounted, including the coupe referred to.

The Delaunay-Belleville cars, which are exhibited by Brewster & Co., of New York, are naturally uncommonly well taken care of in the matter of body work, the exhibitors taking the occasion to show conclusively that American bodies and imported chassis can be combined to the best possible advantage. Particularly attractive is an en-

seems sufficient in itself to attract to the exhibit all the attention that the attendants are capable of handling—and perhaps a little more. The complete summary of exhibits is as follows:

Adams-Lancia Co. — Seven four-cylinder Lancia cars; three broughams, three limousines, one touring car and one chassis.

Brewster & Co.—Four Delaunay-Belleville cars: One each six-cylinder limousine and convertible touring car and collaps-tible brougham; one four-cylinder collaps-tible brougham.

Bugatti Automobile Co.—Three four-cylinder three-passenger Bugatti runabouts.

De Dion-Bouton Selling Branch—Three eight- and one four-cylinder De Dion-Bouton cars: One each touring and roadster and two limousines; two chassis.

Distributing and Importing Co.—Six four-cylinder Mercedes cars and one four-cylinder Marshall-Arter: Mercedes touring, convertible touring, four-passenger racing runabout and three limousines.

Marshall-Arter chassis.

Fiat Motor Sales Co.—Four Fiat cars: Two four-cylinder limousines and one landaulet; one six-cylinder limousine.

Isotta-Fraschini Motors Co.—Five fourcylinder Isotta-Fraschini cars: One each touring, convertible touring, coupe, limousine and runabout; two chassis.

Peugeot Auto Import Co.—Four four-cylinder Peugeot cars: One each cyclecar and limousine; Lion-Peugeot roadster and touring cars; one chassis.

S. G. V. Co.—Six four-cylinder S. G. V. cars: Two broughams and one each "collapsible coupe," touring, roadster and landaulet; one chassis.

Simplex Automobile Co.—Four four-cylinder Simplex cars: Two limousines, and one each touring and racing cars; two chassis.

Sewell, F. W.—Three four-cylinder Minerva cars: Two limousines and one roadster.

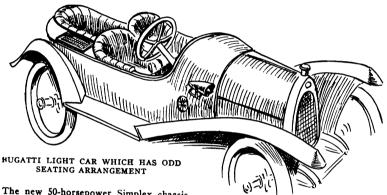
Holbrook Co.—Limousine body on six-cylinder Fiat chassis; limousine body on eight-cylinder De Dion-Bouton chassis. Columb Tyres Import Co.—Prowodnik tires

Engelbert Tire Co.—Engelbert tires.
Gaulois Tire Corp.—Gaulois tires.
Dunlop Wire Wheel Corp.—Dunlop detachable wire wheels.

Faure, A .- Faure tires.

Braunworth, Otto—Dunlop tires.

Picard, A. J., & Co.—Gray & Davis lamps and electric lighting and engine starting systems; Allen tire cases; A. V. shock absorbers; Braender tires; Klaxon horns; Billings & Spencer tools; Phinney-Walker clocks; Waltham clocks; Mobiloil; Motometer; and general line of supplies.



The new 50-horsepower Simplex chassis of the chain- and shaft-driven types are practically alike, except in the parts that pertain to the final drive system-which, of course, makes considerable difference in the construction of the rear end of the car. There is but little change from previous general design, however, the 38-horsepower model having served as a basis for the "fifty." The two stripped chassis shown have cylinders 53% x 61/2-no wonder the motor is a puller!-and it is an interesting fact that the same motor, with modifications, is used for a 75-horsepower speed model. The valves are made larger, the timing and cam-contours especially designed and the pistons are of steel and, of course, very light, as are other reciprocating parts. the materials being such as to give the requisite strength. Rushmore starting and lighting systems are fitted to both models.

Now that the electric lighting and starting idea has obtained a firm footing in the Salon, it becomes quite proper to further promulgate the use of electricity for increasing convenience in the operation of the car. And the work has been taken up, very appropriately, by the S. G. V. people with their machine with electric gearshift, which has been described in detail in Motor

closed car of the so-called "sporting" type, in which the individual seats, all in a single compartment, afford the utmost sociability. The dull gray finished exterior is harmoniously designed from end to end; there is a low, compact effect that is particularly in keeping with the character of the machine.

The Minerva exhibit, which does not include a stripped chassis, includes a number of fine examples of foreign body-building. Most of the bodies are of the enclosed type and of moderate size. A runabout is shown, however, that is typical of a very large class of foreign bodies, having a large rear seat that folds down into the rear compartment when not in use. It may be said that nearly all of the runabouts and roadsters at the Salon have this disappearing rear seat arrangement, and in one or two cases the seat is sufficiently wide for the accommodation of two persons-if the persons are not too bulky. Speaking of enclosed bodies, the Fiat exhibit consists of nothing else, and be it said that the conservatism of the Fiat people in sticking to their standard chassis construction and in refraining from doing any "stunts" even in body building appears to be thoroughly justified. The name Fiat

#### PICKING GOOD PROSPECTS "OUT OF THE AIR"

# Reilly Explains to His Junior Assistant How "Leads" May Be Secured in Other Than Regular Channels—Not Necessary to Wait Until a Man Asks for a Catalog Before Trying to Sell Him a Car.

Tommy Trumbull was just getting so he was taking an interest in life again. The be-whiskered doctor insisted that the youthful alesman's life was at no time in danger, despite Tommy's insistence that only an efficient constitutional brake lining was all that kept him from slipping over the Great Divide.

Tommy's fortnight with the family on tiptoes and a row of dark brown bottles on the
dresser began the morning after he went
up on East evenue to help christen the new
chaing dish he bought for a Christmas present; he attributed his illness to something
else and loyally resented any insinuation
that he had been a victim of the young
woman's expedition into the realm of denatured alcohol and gluey cheese.

#### Wanted, Prospects to Pursue.

None of the members of the Reilly establishment, from the Boss to Tommy, were saying much about that party; it was a touchy subject.

But today Tommy was nearly back to his old-time form, and the way he rustled through his prospect file indicated a renewed interest in business.

"Haven't any prospects you want chased up, have you?" he asked of Reilly as the dealer pulled out the office prospect drawer and prepared to select a few victims for the opening of the new year.

"What happened to those I gave you?"

#### Various Ways of "Digging Them Up."

"I have them yet," replied Tommy, who explained, "I've kept after all of them and some of them seem to be coming along pretty well, but for about a week now I haven't much to do. I have dates with all of them or have a date set for making another call, but all the dates are a few days ahead."

"Why do you ask me for prospects to chase? Where do you think I get prospects? Can't you find any yourself?"

"Why, you get a lot every day, don't you? From the factory advertising department, from tip-offs and from people who write in or come in? I suppose there are lots of ways of getting prospects, aren't there?"

"Lots of ways is right!" replied Reilly.
"Lots of ways is right, and you've named

only a few of them. Their name is legion, you know."

"Of course," was Tommy's admission in an offhand sort of way, "I don't pretend to know them all. I haven't been selling cars—or trying to—very long, and some of the kinks of the business are a bit hazy to me yet."

"Why don't you get some prospects for yourself?" asked Reilly, as he scanned the cards in the drawer.

#### Tommy Does a Deep Thinking Part.

"Get some for myself! What do you mean? How can I?"

"Why can't you? Don't you know anyone who wants to buy a car?"

"No, honestly I don't." Tommy gave the appearance of a man in deep thought. His thoughts may have been miles away, but he gave a perfectly good imitation of a man thinking up someone who wanted to buy a car.

Reilly continued to thumb the cards, and Tommy looked convalescently out of the window; Nellie pecked busily at the type-writer, and the Shop Boy, whose duty it was to keep things clean, made the only other sound as he whisked about with his broom.

#### Reilly Clears Deck for Action.

After about a minute of this sort of thing Reilly asked, "Do you want to dig up some prospects of your own, Tommy?"

"Certainly, I do!"

"Well, go ahead!"

"That's like asking me if I want a million dollars; if I do, 'Go ahead and make it!' I don't know how to dig them up," expostulated the youth. "I'd be only too glod to do it!"

"I believe you're honest about that, Tommy, and you are not unlike a great many dealers and salesmen; they take what is almost forced upon them and that's all. As for digging up business, they are deficient."

"Well, I'm right here to do the right thing if you'll only give me a push," announced Tommy.

#### "Get More Business" the Slogan.

"The main thing is 'Get more business!"
"Yes, but how."

"That, Tommy, is the question that would

put many a dealer and a salesman on the road to more money if he would but stop, ask that question of himself, and hunt until he found the answer. A dealer gets prospects from the inquiries which are received by the factory advertising department, he gets answers to his own local advertising. owners of cars 'tip him off' to men who are think of buying cars, and there are these and other recognized and generally employed methods of getting in touch with prospective owners; and at this point many dealers stop. If these sources do not produce a large number of prospects the dealer or salesman concludes that there is no demand for the car and he speedily becomes a knocker."

#### Lecture Gets Well Under Weigh.

Reilly turned in his chair to face Tommy and asked, "If you were selling real estate—nome lots, for instance—where would you get your prospects?"

"Hunt for 'em, I suppose."

"Well, why can't the same system be employed in selling cars?" demanded the dealer. "It is all right to follow up the prospects which come your way, but any business beyond that has to be created to a large extent. To take your specific case: You have faithfully followed up the prospects which were given you by me, and you have reached a point where you could do more but have practically nothing to do. It is at this point that there is an opportunity for creative work."

"And the opportunity----'

"It lies in picking prospects out of the air, out of the telephone book, out of the directory, out of your mind, from anywhere that there is any possibility of their existing."

#### Main Thing Is to Find Right Men.

"This sounds interesting, really!" exclaimed Tommy.

"It's so simple it's a shame that more dealers don't do it. Many of them do, but more of them might. When the prospect list gets to the point where it doesn't furnish all the material that could be used, prospects can be secured from a list that contains thousands. There are in this very city scores of men who might buy cars if it was put up to them in the right way; all



that is necessary is to put it up to them.

"I know of one manufacturer who sketched out such a plan and sent it to his dealers; some of them used it, and some of them didn't. He told them that they were passing up scores of good prospects every day; he told them that if they didn't know how else to go at it they could do no better than to take a street directory and canvass the town street by street. He told them to start in at the end of one street and make a try at every man living on the street who looked at all as if he could buy a car, and when they had that street done to take up another. Some of the dealers said it was foolish and a waste of time, but there is merit in the scheme, nevertheless."

"It sounds as if it might be some good," agreed Tommy.

#### Prospecting for New Prospects.

"But to lay aside that scheme," continued Reilly, "prospects can be secured in that way to a certain extent. I, myself, don't believe in canvassing a town street by street, but right here in our own business we find prospects which we do not get through the regular channels. Charley and I often sit down and speculate on who we think might buy a car and we go after that man; sometimes we get him and sometimes we don't, but we haven't lost anything by trying.

"A dealer or salesman can get a whole lot of valuable information out of the newspapers; the papers every day contain names by the dozen, and more than one car has been sold from a start that was nothing more than a name. You often hear of dealers who landed on a prospect who had just come into a piece of money and who got such cues as that from the daily papers, but you don't have to wait until a man inherits a fortune before you try to sell him a car."

#### Giving Tommy a Vigorous Start.

Reilly picked an old newspaper out of the waste basket. "Here," he said; "here's a prospect you can have!"

"Who?" Tommy peered over Reilly's shoulder.

"Jeffery Millingham," said Reilly, pointing to a story of a man whose name was not unfamiliar to followers of current news. "Unless I'm mistaken, Millingham hasn't a car. Go call on him, see if you can't sell him."

"Millingham? Millingham?" puzzled Tommy. "Oh, sure! I know who he is!"

"Of course," continued Reilly, "I don't mean to say that you can select your prospects every day out of the morning newspaper, but it only goes to hear out the theory that you don't have to wait until they come in through the regular channels.

Doubtless you yourself can think of some man who seems to be prospering well, yet who does not own a car; undoubtedly you often have wondered why he hasn't one and have said in your own mind that if you had as much money as he has you would

"Why-why-sure I do!" Tommy leaned forward and slapped his knee. "It's dawning on me now! I see what you mean! Why, say, Mr. Reilly! I know a lot of prospects!"

have a car. How about it?"

"I thought you did," smiled the dealer.

"There's Hubert K. Smith, up on our street. He's been coming along pretty well in business-has a hide and skin business up on the North Side-I've often wondered why he hasn't a car! There's the Ely family. They could buy one, but never have. Then-"

Tommy, having been given a start, seemed in danger of running up a staggering prospect list, when Reilly interrupted.

"I guess that doesn't offer something to keep you busy, eh?"

"It's great!" bubbledTommy.

#### Reilly's Advice Anent Cheese.

"But don't get too enthusiastic at the start," admonished Reilly. "You undoubtedly will get some good prospects in this way, and it is quite certain that you will encounter some discouraging cases, so don't start out with the expectation that everything is going to come easy. It won't. You'll meet rebuffs and very likely run across men who are sore on automobile salesmen and who won't thank you for trying to make them see the advantages of owning a car; but you should worry! Just keep pegging."

"I don't think a few rebuffs will worry me," smiled Tommy." I used to sell books, you know."

"Yes, I know it well," replied Reilly. "Two dollars' worth. And when you get to another point where you don't have a prospect to work on, sit down and read the telephone directory; that often turns up one or

Tommy was putting his coat. As he Leather Men Oppose "Imitation Leather." started toward the door Reilly stopped him. "Tommy."

"Yes?"

"Whatever you do, don't take your prospects to any cheese parties."

The youthful enthusiast grinned guiltily and continued on his way without comment.

## South Bend Tradesmen Form Organization.

The dealers, garagemen and repairmen of South Bend, Ind., have seen the value of organization and have banded together under the name St. Joseph County Automobile Dealers and Garage Association; the objects of the organization are to eliminate

the price-cutting methods which have pr vailed in some instances, to establish basis for the used car situation, to guar against bad credits and to bring about more friendly feeling among the trade as whole. R. M. Seely, of the Seely Aut School & Garage, is secretary.

#### Bazaar and Hen Show in Garage.

Every garageman and dealer likes stand as well as he can with the public an is desirous of having his place of business brought to the attention of as many people as possible; there are various ways of step ping out into the limelight but the New comer Motor Car Co., which conducts garage and salesrooms in Buckhannon, W Va., has taken up this publicity problem with a vengeance. As a result nearly every one is desined to know where the garage and what it looks like.

The company started off its fall season i publicity gathering by lending its building -or a good portion of it-to the women of the Buckhannon Baptist Church for the holding of a Christmas bazaar and dinner this affair lasted a whole day and evening and more of the town's representative people visited the garage that day than eve could have been brought there by any other

Next on the program was the second and nual show of the Upshur County Poultry Association, held December 30 to January 2 For the four days 258 birds of various sizes and descriptions made the garage echo with their hen talk, and a touch of color was injected by the multiplicity of ribbons and medals which adorned the exhibits. And again people who might never have gone near the garage otherwise, could not fail to become acquainted with it.

The building is well suited for these purposes; it is 153 feet long and 30 feet wide, has a concrete floor, is well lighted by windows by day and by electric lights at night and is centrally located. The main floor is 30 x 90 feet, the washing room 23 x 30 feet, and the machine shop 40 x 30 feet.

If the action instituted last week by the National Patent and Enameled Leather Manufacturers' Association, at a meeting in Newark, N. J., bears fruit, "imitation leathers" which are not leather may have to select a new name; a committee was directed to endeavor to secure Federal legislation against the sale of goods labeled "artificial leather" or "imitation leather."

The leather men contend that many solabeled products on the market are not composed of leather in any part and that the labeling not only is misleading to the public but is damaging to the regular leather manufacturers.

## FORD STAGGERS THE WORLD; FIXES \$5 AS DAILY WAGE

(Continued from page 5.)

All but 10 per cent. of the employes will share in the profits. Of the 10 per cent. who are under 22 years old—not mentioning the women—all of those who are supporting families, widowed mothers, or younger brothers and sisters, will be treated like the older men, while those who are not supporting dependants will also be entitled to a share of the reward, but each must first prove himself worthy of it. In other words, he must demonstrate that he is "sober, safe (?), steady, industrious and must satisfy the superintendent and staff that his money will not be wasted in riotous living."

Not being regarded as the "same economic factors as the men," to quote the language of Mr. Couzens, and because they "cannot be considered fixtures in business," the 200 or 300 women who are employed in the Ford electrical department and in the office will not share in the profits to the same extent as the male workers. All of them, however, will be given substantial increases in their wages.

#### Enormous Mobs Looking for Jobs.

Even these staggering facts and figures do not tell the whole story for, in addition to obtaining more money, the men will render less labor. Instead of the present two nine-hour shifts, the working day will be reduced to eight hours and three shifts instead of two employed, thereby giving work to approximately 4,000 additional men.

When this news was published in Detroit, the Ford factory was at once besieged by men seeking work. On Tuesday morning, the vicinity of the Ford plant was blocked with a horde of humanity-there may have been 10,000 or there may have been 15,000 in the great throng. At any rate, it was so great that the police were unable to cope with their numbers, and it was only when the fire hose was brought out and a deluge of water threatened that the crowd gave way and made ingress and egress possible. Every day since similar crowds have been in evidence, many men from out of town and many employes of other automobile factories joining the throng seeking the higher reward.

Apart from the huge distribution of profits, the plan also provides that no workman shall be discharged except for unfaithfulness or inefficiency, power to summarily discharge men having been withdrawn from foremen.

All this news, which startled the world, was made public to the Detroit newspaper men by Messrs. Ford and Couzens while MOTOR WORLD

seated in their office on Monday forenoon last when, in response to questions, they speedily laid at rest all notion that the distribution of profits will or may carry with it an increase in the price of Ford cars. Instead, it was specifically stated that the Ford people hope to continue their policy of price reduction. The money merely will be diverted from the stockholders to the workmen. The stockholders, incidentally, are as follows: Henry Ford owns 58 per cent. of the stock, or 11,700 shares; James Couzens owns 2,180 shares; John F. Dodge, 1,000; Horace E. Dodge, 1,000; Horace H. Rackham, 1,000; David Gray, 2,100, and John W. Anderson, 1,000. Twenty shares are held by R. V. Couzens.

#### Action Result of Much Planning.

The fact that less than two months ago the Ford company regraded its employes and revised the wage scale, thereby increasing its payroll approximately 13 per cent., had served to disarm even the remotest suspicion that Ford had anything of a larger nature in mind.

The profit-sharing plan, which goes into effect on Monday next, is uncommonly complete and far-reaching; it not only places a rich premium on loyalty and efficiency but the manner in which the morals of the younger men are to be guarded is not the least of its great number of praiseworthy features.

In making public the plan on Monday, Mr. Couzens gave an additional inkling of the trends of thought which formulated them. He stated that a four-hour work day had been considered, in order to permit even more men to be employed, but that idea was dismissed because it entailed grave possibility that it would result in the disorganization of the Ford working force.

Social justice which begins at home was the foundation of the great plan. In amplifying the idea, Messrs. Ford and Couzens, between them, said:

"We want those who have helped us to produce this great institution and are helping to maintain it, to share our prosperity. We want them to have present profits and future prospects. Thrift and good service and sobriety all will be encouraged and recognized.

#### Every Chance Given Every Man.

"If we are obliged to lay men off for want of sufficient work at any season we propose to so plan our year's work that the lay-off shall be in the harvest time—July. August and September—not in the winter. We hope in such case to induce our men to respond to the calls of the farmers for harvest hands and not to lie idle and dissipate their savings. We shall make it our business to get in touch with the farmers and to

induce our employes to answer calls for harvest help.

"No man will be discharged if we can help it, except for unfaithfulness or inefficiency. No foreman in the Ford company has the power to discharge a man. He may send him out of his department if he does not make good. The man is then sent to our 'clearing house' covering all the departments, and is repeatedly tried in other work until we find the job he is suited for, provided he is honestly trying to render good service.

"We are quite sure that we will still pay handsome dividends to our stockholders and will set aside reasonable amounts for additions and improvements and assembling plants in other parts of the country. And after that it is our hope to be able to do still better by our employes. We want them to be in reality partners in our enterprise.

"We do not agree with those employers who declare, as did a recent writer in a magazine in excusing himself for not practicing what he preached, that 'the movement toward the bettering of society must be universal.' We think that one concern can make a start and create an example for other employers. That is our chief object.

#### Women Not Classed With the Men.

"The public need have no fear that this action of ours will result in any increase in prices of our products. On the contrary, we hope to keep up our past record of reducing prices each year.

"We may have to make changes in our plan. If hard times should befall us we may have to reduce or modify our distribution of profits. But the outlook now is such as to justify this distribution this year.

"We believe in making 20,000 men prosperous and contented rather than follow the plan of making a few slave drivers in our establishment multi-millionaires."

"Why will not the women employes share in the profit distribution?" was asked.

"They are not the same economic factors as the men are," responded Couzens. "They do not control the standard of living. The average woman employe cannot be regarded as a fixture in a business as a man can be. A woman will leave at almost any time, for almost any reason, and when she stays long enough to be a dependable worker she is apt to get married and have someone else support her. It is the men we aim to benefit. However, in connection with the profit sharing, the women employes will not lose, for there will be substantial raises of wages for them."

"The sociological side of profit sharing is one of great importance and one to which we have given some consideration already, but will give a great deal more from now on," added Mr. Couzens. "We have a so-



ciological department to look after our employes' welfare, and this will be greatly extended.

"We want to see that our employes do not lose their efficiency because of prosperity and will have our sociological department work along that line. Employes who cannot remain sober and industrious will be dismissed, but no one will be let out without being given every possible chance to make good. No one will be discharged until we find that he is of no use to us in any way whatever."

Both Mr. Ford and Mr. Couzens said that it would be impossible to estimate what profits might be shared next year by the employes.

"Business conditions may change by that time," said Mr. Couzens. "Hard times might affect the business if they came. We might have competition that would reduce our profits. But if there is nothing changed over present conditions it is possible that the profits to be shared would be greater next year than this.

"We are making a beginning now and will make any improvements to our plan that we can later."

After distributing \$10,000,000 to its stock-holders earlier in the year, the Ford company had remaining in bank on September 30th last \$13,225,000 and a surplus of \$28,124,000, both items having doubled during the twelve-month.

#### Service Company with Broad Scope.

"To promote a fraternal organization in which everyone will boost each other," is the purpose of the National United Service Co., which has been projected in Detroit by several men identified with the automobile industry who are not, however, quite ready to disclose their identities. It is proposed to manufacture and sell both cars and parts and to establish a chain of service stations controlled by dealers, but the most immediate object is the manufacture of a \$495 light car, which will be sold to the dealer-members, who also must he stockholders in the company. The car in view will be made up of standard parts and be of a standard tread. It will have a unit power plant with a 234 x 4-inch motor, Mayer carburetter, Remy magneto, wire wheels, electric lights, windshield and top. The preliminary arrangements are in charge of a carburetter man.

#### Maine Indian Takes Over Havoline.

The Indian Refining Co., of Augusta, Me., has taken over the Indian Refining Co. of New York, which produces Havoline oils, among other things. Its authorized capital is \$7,900,000, and its legal representative is C. F. W. Dillaway, at 17 Battery place, New York.

#### KLAXON PATENTS SUSTAINED; NEWTONE MAKER LOSES SUIT

(Continued from page 6.)

cussed, the automobile signal alarm makes no use of a number of actuating means stated in the patent.

"Both the complainant and the defendants use a rotary cam. This one means would seem to be, at the present time, the only commercially valuable means for putting an automobile or similar norn upon the market, and the use of these means in an automobile horn is plainly the most valuable use to both the complainant and the defendants, and covers, so far as the issues in this case are concerned, any question that might arise from modified devices for other purposes. . . .

"The general defense of infringement is interwoven with the claims of the defendants, that they are using embodiments of certain patents of the prior art, or that the differences between the complainant's patents and the patents of the prior art are as to details and as to matters which also distinguish the complainant's devices from those of the defendants."

The court went into a detailed and highly technical discussion not only of Hutchison's patents but of those of the prior art as well. The varied forms in which the mechanism may be arranged to produce the desired result were carefully reviewed and every instance of priority or anticipation was unqualifiedly bowled over.

The Klaxon horn produces its sound by forcibly vibrating a disk by means of a cam, the cam contacts having been measured up as far as 307,000 a minute; sound sufficient to alarm is audible at about 800 contacts a minute.

#### "Method" and "Sound" of Klaxon Discussed.

A feature of the opinion is Judge Chatfield's discussion of the "method" and "sound" of the Klax-on. He stated that the patentee could not "obtain a valid patent under the guise of a 'method' claim by describing such machine functions and stating that he claimed a patent for the result-i. e., the illustration of the phenomena described. Corning v. Burden, 56 U. S., 252. The mere use of the word 'method' does not prove discovery of a new process or a useful and novel way of producing the desired results or functions through an original application of well known principles, with well known materials and well known parts of different prior art devices and methods. Union Match Co. mond Match Co., 162 Fed., 148, Westinghouse v. Boyden Brake Co., 170 U. S., 537.

The patentee has claimed in the present case devices to create a sound and also the way or method of arranging and using the parts of the device to make it produce a sound of the sort desired. In so far as this result is a noise or signal, it is impossible to patent the noise itself, but if that noise be produced by a patentable method, there would seem to be no reason why a valid method claim should not be included with the claims for the combinations of parts shown in the device. Risdon Locomotive Works v. Medart, 158 U. S., 68, and cases cited; Leeds & Catlin v. Victor Talking Machine Co., 213 U. S., at p. 318.

"The defendants contend, rightly, that the production of a similar noise by another method or unequivalent devices would not be infringement, but the complainant may use the result produced as evidence of the occurrence of similar physical phonomena. If the instruments producing those phenomena are the same, it is a necessary conclusion that the methods of production are similar, and a valid method claim might be infringed even when the product itself is unpatentable.

"The defendants . . . attempt to show the patents in suit to be invalid by contending that the only mechanical combination really shown by the claims is the mechanical vibration of a diaphragm with certain means or attendant devices used in earlier patents in the same way. They also contend that the mechanical vibration of a diaphragm, for the purpose of creating sound waves by the move-

ment described, was old in the art when Hutchison filed his application.

"It will be seen that this argument raises the principal question of the case. The patents as a whole are consistent and can be supported if the idea of the device generally, with the different equivalents or parts necessary for its actuation, was capable of being patented as a whole as a new invention by Hutchison. On the other hand, if Hutchison merely described certain ideas or devices old in the art, and, without suggesting or describing any new patentable use, arrangement or application of the proceeded to string together, on the unpatentable structure, new combinations various sorts to produce the same result, then in so far as these new combinations did not of themselves show patentability, the claims would be invalid. Even though some of the combinations should show patentability, the general claims for the entire device and all method claims would be invalid, and the defendants' structures would have to be tested from the standpoint of infringement of the particular claim

#### Seven Essential Construction Features.

"In this very way, the defendants seek to show that when narrowed to particular combinations or arrangements of parts, the Hutchison patents could not be read so as to include the defendants' devices, and these devices are said by the defendants to be rather those of the prior art, such as Pierman and Gieseler, which will be considered in that connection.

"The experts for both sides have enumerated seven different physical parts in the complainant's and defendants' commercial signaling devices. They have used this arrangement in construing the Hutchison patents, in comparing the complainant's horn with the claims of the patent or with the defendants' horn, and in comparing the defendants' horn with the patents of the prior art.

"These seven elements as stated by the complainant are: (1) A small rotary motor requiring low voltage current, (2) a cam wheel, (3) a diaphragm, (4) a contact or wear piece, (5) a horn or resonator, (6) a casing, (7) means for adjusting the position of the different parts.

"The defendants' expert includes, in making up a similar list, the corresponding parts of the devices of the first and second Hutchison patents, and stating them in the same order he names: (1) The actuating means (an electric motor or something else), (2) transmitting means (a rotary disk with cams or something else), (3) an air-vibrating member (diaphragm or something else), (4) transmitting means (wear piece or some other member between the cam and the diaphragm), (5) a horn or resonator, (6) the casing, (7) the adjusting means.

"Both experts add as an eighth part, or as a general essential, the wires, switch and battery for applying current. These the defendants' expert names as controlling means, in the sense that without the application of current, the driver of the machine could not operate the signal. But this use of the word 'control' must be carefully distinguished from the so-called harmonizing or reciprocal adjustment of speeds and vibrations because of the amount of current load, the natural rate of vibration of the parts themselves and the interference caused by the relation of the parts with respect to one another.

#### Broadness of Klaxon Application.

"The defendants allege that Hutchison specified the choice of 'any suitable material' for his diaphragm, the use or omission of a horn, the possibility of using a horn of any shape, the use of a cam with surfaces of any shape (providing a direct thrust and allowing of an undisturbed or elastic return), the use of a casing or not, the possibility of adjustment so as to increase or decrease the load (from the point where the motor would not operate the cams to a point where the contact was so slight as to give insufficient vibration of the diaphragm), the choice of any size or thickness of the diaphragm, which would allow forcible displacement and elastic return, the use of a tight connection or a loose link, a friction drive or motor, a pitman operated by an eccentric, or by some other positive means.

"They argue, therefore, that he has in effect claimed but two essential elements, viz., some sort

#### MOTOR WORLD

of a diaphragm, and something to cause the diaphragm to be displaced and bibrated or bent, and then cause to return in readiness for another blow.

They go so far as to claim that Hutchison has attempted to patent a mere noise, and that he has not described or specified what noise, so long as it is a loud or disagreeable and startling noise. They claim that his commercial horn produces a loud, disagreeable, startling or alarming noise, which is merely the effect upon the human ear of a repeated vibration of a metallic diaphragm at a substantially predetermined speed, and hence that any similar rapid disturbance of a comparatively similarly sized metallic diaphragm must produce a similar noise

#### Novelty of Motor Control Denied.

"They argue from this that the Hutchison patent is invalid, as they assert that the vibration of a diaphragm, at a speed which could be substantially predetermined and caused by transmitted force through a rod or cam, was old in the art and has been shown by prior patents. They also assert that the use of the horn or resonator was well known or understood, and deny the novelty of control of the motor by the resonator and diaphragm.

"In this way they allege that both the complainant and defendants are using old ideas, and that Hutchison has not described any patentable combination

or new arrangement of parts.

"The complainant's expert had by the use of one mirror tried to prove with the Hutchison diaphgram, the absence of tilting or buckling. . . . We are left to the ordinary conclusion that if the diaphragm be bodily displaced, it must have a bodily elastic return, whereas, if there is any tendency to twist or to buckle any diaphragm, there will be a tendency to reverse on the return, and in so far as this buckling or twisting of the diaphragm might produce sound, it would increase the harsh or discordant effect of the signal, but has no bearing upon the question of inventiton or patentability of Hutchison's disclosure.

#### Argument on Diaphragm and Resonator.

"If Hutchison's idea of causing bodily displacement of the diaphragm, with free elastic return, in a direction at right angles to the general plane of the diaphragm, and in the way described in the patent, was original with him, it is patentable over Pierman, which in that respect follows Gould, as will be shown later.

"The use by Hutchison of a comparatively large diaphragm and of a resonator with a large mouth-piece opening, removes from the structure the general magnifying character of the speaking trumpet or megaphone, that is, of the intensifying reflector, and gives to the resonator only the improving qualities of sharpness, direction and somewhat letter carrying ability, with a harmonizing effect in connection with the action of the diaphragm case and cams."

In succession the court then took up and disposed of the patents on the Gould campaign rattle, No. 785,874, March 28, 1905; the Savart wheel; the Bapst & Falize alarm, No. 384,412, June 12, 1888; Pierman's horn, No. 13,495, August 26, 1899, British, and United States, No. 620,958, March 14, 1899; the Wengle instrument; the Gieseler German patent, No. 119,306, April 4, 1901; the Gieseler English patent, No. 21,084, 1900.

#### Effect of Abandoned Experiments.

The Lovell-McConnell company, however, has rights under the Pierman patents, but as it was declared not to anticipate it had little importance either way. A prior use in America was asscribed to A. L. McMurtry, who filed an application March 24, 1905, but abandoned the patent because he could not make his horn operate for any length of time without bursting the diaphragm. This was cited by the defense, but of it the court said:

"Mere experimentation in public or in a public place, followed by no improvement upon the prior art, and ultimately abandoned, is not sufficient to defeat a subsequent invention upon which patent has been issued, and which has finally proven to be of commercial value so that those who abandoned their unsuccessful experiments realized what they might have accomplished if they had themselves

reached the point where the invention could have been patented by them.

"In the same way, a defendant cannot defeat an otherwise valid patent by showing abandoned experiments, even though these might have (but as a matter of fact did not) progress to the point of disclosing the patentable invention."

The court touched upon the patents of Zizang, No. 415,990, November 25, 1889; Chalas, No. 874,792, December 24, 1907; Hope-Jones, No. 14,473, 1896, and No. 2,677, 1901, both British; but when all had been reviewed Judge Chatfield stated that none had anticipated Hutchison's ideas. The wear piece upon the Klaxon diaphragm played an important part in the consideration.

"The shape and proportion of the diaphragm," commented the court, "the wear piece and the corrugated surface in the so-called Pierman devices, the method of applying power in distinction from the variable attachment of the Pierman device itself to a bicycle wheel or other vehicle, with the variations and changes from Gould and Gieseler, all go to substantiate the contention of the complainant, that the various exhibits, while instructive and illustrative, do not show that Pierman or Gieseler described in their patents any device illustrating and showing appreciation of the patentable ideas of Hutchison in the patents in suit.

#### Priority That Is of No Account.

"Even if this illustration and embodiment of the Wiegle devce and the description of the Wiegle motorophon in connection with the other patents be held sufficient to throw doubt upon any patentable invention by Hutchinson describing a device consisting of a diaphragm of metal or some other substance, with or without a resonator, and vibrated by a crank attached to an eccentric, to which power is supplied by a steam engine, by hand, or by motor; nevertheless, none of the issues in this case and none of the claims of the Hutchison patents of any proven practical value have to do with that single idea.

"The expert for the defendants has produced a model, which he calls the Second Wiegle device or a Hope-Jones Device, and in which the usual Klaxon diaphragm, horn and case are attached to a pitman rotated by an eccentric and driven by the usual complainant's rotary motor. He compares this with a Hutchison device having but one cam projection upon the rotary disk. He finds similarity of sound produced and therefore argues that his so-called application of Wiegle or the Hope-Jones method of vibrating a diaphragm or small sounding board, by a motor used in connection with Hope-Jones's other idea of affecting speed of actuation by lengthening or shortening the resonator, completely anticipates the Hutchison patents, and says that he sees no reason why such a device as he has called the Small Wiegle or Hope-Jones Illustration would not give a practical commercial automobile signal.

#### Objection of "Double Patenting."

"For the reasons previously stated in this opinion, it would seem that Wiegle did not disclose any such idea nor one which could be merely applied by a mechanic in making a successful practical alarm signal. Nor does Hope-Jones disclose anything beyond at least the discarded claims of the Hutchison application, and Hope-Jones's idea of governing the vibration is apparently distinguishable from that of Hutchison.

"It would follow, therefore, that a combination of Hope-Jones applications to a Hutchison diaphragm, resonator and motor does not prove that Hope-Jones either invented or disclosed any such use. The Hutchison claims would seem to be patentable over any such disclosure.

"A question was reserved earlier in the opinion as to whether the use of the stiffening bar in the defendants' form of diaphragm made this a Gieseler or Pierman device rather than an infringement of the Hutchison claims. As Gieseler and Pierman have been held not to anticipate, this question becomes material, and the conclusion from the whole matter would seem to be that if the bar has any effect at all, it may render the tone somewhat more musical, and in that sense is like certain parts of

the Gieseler and Pierman devices; but its presence does not affect the other elements covered by the Hutchison claims, and the use of this bar would not therefore allow the defendants to escape infringement by claiming to follow Gjeseler and Pierman.

"Claim 24 of Letters Patent No. 923,048 calls for means actuated . adapted to cause bodily movement of said diaphragm,' etc., in combination with other parts.

"As has been previously said, the claims in suit are not inconsistent, even though their number, detailed description, and perhaps unnecessary statement of small variations has made it more difficult to consider, classify and compare them with the other patents and to read them in connection with the testimony in the case.

"If the disclosures of the specifications were carried into the various claims of more than one patent, the technical objection of 'double patenting' might be well founded. But the claims of each patent are separate and distinct from the other patents and the resemblances in drawings and text are the natural result of describing improvements or of dividing an application and presenting claims for a specific part or device as a separate invention (Underwood v. Gerber, 149 U. S., 224; Miller v. Eagle, 151 U. S., 187).

"It would seem unnecessary to go through the various claims of these patents merely to classify them or to attempt to pick out particular ones about which some further argument might be stated. None of them are in such broad language that they could not apply to or be read upon the commercial device of the so-called complainant's Kiaxon or Klaxonet horns and the defendants' Newtone horns, or with the commercially useful and valuable forms of this kind of signaling apparatus.

"The manner in which the case has been tried and the presentation of the issues, together with the possibility of causing further litigation by an attempt to separate and comment upon the individual claims that have been called in question, or to specify what structures might escape infringement, make it seem unnecessary to decide other than in a general way that the complainant has the right to employ the Hutchison patents in manufacturing the devices about which issue is raised in this case, and to control or prevent infringement of their claims.

"Upon the issues raised the Hutchison patents and the claims relating thereto, both as to devices and as to a method of operation, seem to be valid. The defendants' devices are infringements and the complainant may have a decree."

#### Hackensack Man's Comprehensive Patent.

Although the first clause of his patent refers to a motor vehicle, the suit which Charles Messick, Jr., of Hackensack, N. J., filed this week in the United States District Court for the Southern District of New York is not likely to have much effect on the automobile trade; not only do the remaining 67 claims of his grant refer to a motorcycle, but he has named as defendants the Hendee Mfg. Co., of Springfield, Mass., maker of Indian motorcycles, and Frederick A. Baker, who sells them in New York City.

The patent is No. 863,622 and was granted to Messick August 20, 1907; it is comprehensive in scope, its claims referring to a clutch, spring frame, coasting pedals, variable spark, motor and the many other devices which are components of the newest machines. In his complaint he says the Hendee company has damaged him probably to the extent of \$1,000,000 in the profits it has made. He names \$100,000 in referring to Baker's alleged damages.





1,072,145. Friction Reversing Mechanism. Herman Moon and James M. Reynolds, Grove City. Pa. Filed Nov. 1, 1912. Serial No. 729,103. (Tapered friction roller system.) 4 claims.

pered triction roller system.) A claims.

1,072,165. Gearing for Motor Vehicles. William C. Price, Chicago, Ill., assignor, by mesne assignments, to F. P. Motor Wagon Co., a corporation of South Dakota. Filed Oct. 9, 1907, Serial No. 336.679. Renewed March 8, 1913. Serial No. 753,078. (Belt drive system.) 4 claims.

1,072,183. Jack Apparatus for Vehicles. Montague Simpson, New York, N. Y. Filed June 19, 1912. (Toggle-operated lifting jack). 2 claims.

1,072,187. Automatic Starting Device for Motors. Joseph P. Smithers, Brooklyn, N. Y.; Herbert Smithers and Walter Smithers, executors of said Joseph P. Smithers, deceased, Filed July 8, 1908. Serial No. 442,515. (Spring starter.) 1 claim.

1,072,178. Rotary Fan. William Sparks, Jackson. Mich., assignor to The Sparks-Withington Co., Jackson, Mich., a corporation of Michigan. Filed Oct. 17, 1911. Serial No. 655,137. (One-piece sheet metal fan.) 5 claims.

1,072,226. Wheel for Motor Cars and Other Vehicles. Arthur Fredk. Hawksley, Fairhaven, England. Filed April 14, 1911. Serial No. 621,059. (Resilient wheel with air cushions between rim and hub connected to hub by radial arms.) 6 claims.

1,072,228. Armature for Magneto-Induction Machines. Gottlob Honold, Stuttgart, Germany, assignor to The Firm of Robert Bosch. Stuttgart, Germany. Original application filed Oct. 4, 1909, Serial No. 520,931. Divided and this application filed Oct. 14, 1911. Serial No. 654,694. (Diagonally wound shuttle armature.) 6 claims

1,072,237. Transmission Gearing. Percy Law Johnson and Francis John Stewart Kilgour, Hereford, England. Filed Oct. 5, 1912. Serial No. 724,-186. (Adjustable throw mechanism with roller clutches.) 4 claims.

1,072,241. Spring and Cushioning Means for Vehicles. Joseph L. La Driere, Albuquerque, N. Mex. Filed Feb. 24, 1913. Serial No. 750,409. (Combination of leaf spring and air cushion.) 6 claims.

1,072,260. Resilient Tire. Frank Reed, Omaha, Neb. Filed Aug. 28, 1912. Serial No. 717,468. (Cush ion tire with transverse through holes.) 2 claims.

1,072,267. Engine Starter. Gregory John Spohrer, Franklin, Pa., assignor to Wilson Motor Starter Co., Franklin, Pa. Filed June 29, 1911. Serial No. 635,930. (Spring and compressed air starter.) 6 claims.

1,072,304. Primer for Gasolene Engines. Claude A. Brooks and Evan G. Kinley, Topeka, Kan. Filed April 5, 19912. Serial No. 688,631. (Primer with spray nozzle directly under intake valve.) 5 claims.

1,072,305. Wheel. Summers Brown, London, England. Filed Dec. 12, 1910. Serial No. 596,821. (Wheel with spring spokes.) 7 claims.

1,072,348. Vehicle Wheel. William D. Morris, Youngstown, Ohio, assignor to The Republic Rubber Co., Youngstown, Ohio, a corporation of Ohio. Filed July 17, 1912. Serial No. 709,961. (Solid rubber tire with slotted metal base.) 4 claims.

1,072,366. Gas Engine. Charles E. Sargent, Chicago, Ill. Filed Feb. 8, 1911. Serial No. 607,258. (Valve system.) 34 claims.

1,072,371. Alarm Device for Gasolene Tanks. Joe C. Stone, Tipton, Ind. Filed March 7, 1912. Serial No. 682,148. (Low-fuel alarm for gasolene tanks.) 3 claims.

1,072,382. Tire. Chadles M. Griffin, Indianapolis, Ind., assignor to Charles M. Griffin and Harry G. Crawford, a copartnership. Filed March 31, 1911. Serial No. 618,068. (Tire with internal springs.) 3 claims.

1,072,389. Transmission in Motor Vehicles. Heinrich Mayer, Arbon, Switzerland. Filed Feb. 11, 1913.

Serial No. 747,592. (Flexible vehicle frame and transmission gear support.) 3 claims.

1,072,394. Convertible Body for Vehicles. George C. Plummer, Washington, D. C., assignor of one-half to Frank E. Plummer, Washington, D. C. Filed Oct. 21, 1912. Serial No. 726,908. (Car body convertible into roadster, touring or delivery body.) 3 claims.

1,072,402. Gas Generator for Explosive Engines. Seymour W. Peregrine, Portland, Me. Filed Nov. 5, 1910. Serial No. 590,945. (Carburetting device using exhaust heat.) 4 claims.

1,072,407. Variable-Speed Gearing. William S. Kindle and Abram L. Plush, Philadelphia, Pa., assignors, by mesne assignments, to said Plush. Filed Aug. 15, 1911. Serial No. 644,193. (Friction transmission.) 5 claims.

1,072,418. Automobile Light Shifter. John G. Becker, Campbell, Mo. Filed Jan. 30, 1913. Serial No. 745,258. (Lamp-moving means connected to steering gear.) 3 claims.

1,072,496. Air Pressure Pump. Ewald A. Raves, Auburn, N. Y., assignor to The Auburn Ignition Mfg. Co., Auburn, N. Y. Filed Dec. 28, 1910. Serial No. 599,777. (Piston pump with one-bearing shaft.) 4 claims

1,072,515. Vehicle Wheel. Charles L. Schwarz, Philadelphia, Pa. Filed Oct. 5, 1912. Serial No. 724,-070. (Wheel with spring spokes.) 6 claims.

1,0722,522. Temporary Connecting and Applying Device for Automobile Tire-Chains. John A. Staples, Newburgh, N. Y. Filed Oct. 5, 1912. Serial No. 724,086. (Spring fastening for tire chains.) 8 claims.

1,072,559. Robe Lock. Thomas P. Bacon, Oakland, Cal. Filed May 14, 1912. Serial No. 697,150. (Device for fastening robe to robe rail.) 1 claim.

1,072,561. Terminal Connector for Spark Plugs. Charles W. Beck, Rockville Center, N. Y., assignor, by mesne assignments, to Michigan Motor Specialties Co., Detroit, Mich., a Corporation of Michigan. Filed Oct. 15, 1910. Serial No. 587,151. (Spring clip.) 10 claims.

1,072,596. Explosive Engine. Levi S. Gardner, New Orleans, La. Filed June 19, 1906, Serial No. 322,379. Renewed Jan. 5, 1912. Serial No. 669,722. (Power regulation system.) 5 claims.

1,072,597. Resilient Vehicle Wheel. Gloster J. Garrett and Herbert C. Garrett, Richmond, Ind. Filled July 25, 1912. Serial No. 711,411. (Spring wheel.) 1 claim.

1.072,604. Resilient Vehicle Wheel. Henry S. Grace, San Francisco, Cal. Filed July 29, 1912. Serial No. 712,194. (Springs between inner and outer rims.) 1 claim.

1,072,605. Resilient Vehicle Wheel. Henry S. Grace, San Francisco, Cal. Filed Feb. 5, 1913. Serial No. 746,363. (Springs between inner and outer rims.) 1 claim.

1,072,612. Universal Joint. Emanuel Hermann, San Francisco, Cal. Filed Dec. 11, 1912. Serial No. 736,089. (Spherical universal joint.) 4 claims.

1,072,667. Roller Bearing. Reugen S. Smith, Milwaukee, Wis. Filed April 28, 1913. Serial No. 764,026. (Roller bearing with divided rollers.) 2 claims. 1,072,6999. Resilient Vehicle Tire. John T. Clark, Provo, Utah. Filed Nov. 8, 1911. Serial No. 659,161. (Spring tire.) 2 claims.

1.072,713. Automobile Street-Cleaner. David Gaul, 1.08 Angeles, Cal. Filed March 11, 1912. Serial No. 683,111. (Power-driven rotary brush and conveyor.) 3 claims.

1.072.766. Two-Cycle Explosive Engine. Horatio H. Newman, Sandersville, Ga. Filed Aug. 12, 1912. Serial No. 714,673. (Sleeve-valve two-cycle motor.) 3 claims.

1,072,770. Shock Absorber. Adolph Peteler, New York, N. Y. Filed Feb. 20, 1912. Serial No. 678,-813. (Hydraulic shock absorber.) 3 claims.

1,072,777. Internal-Combustion Engine. Whitman Russell, Greenfield, Mass. Filed Dec. 14, 1911. Serial No. 665,672. (Two-cycle motor with rotary valve.) 1 claim.

1,072,786. Engine Valve Gear. Robert C. Stevens, Erie, Pa. Filed Jan. 25, 1913. Serial No. 744,203. (Magnetic valve gear.) 3 claims.

1,072,791. Automobile. Ralph P. Thompson and William S. Thompson, Leipsic, Ohio. Filed Oct. 10, 1912. Serial No. 724,979. (Spring suspension system.) 4 claims.

1,072,793. Tire for the Wheels of Road-Vehicles. Alfred William Torkington, London, England. Filed Aug. 26, 1910. Serial No. 579,083. (Solid tire with endless chain embedded in base.) 3 claims.

1,072,797. Driving Gear for Motor Vehicles. Earl Vernon Varcoe, Honesdale, Pa. Filed Dec. 27, 1910. Serial No. 599,614. (Driving system for steam cars.) 5 claims.

1,072,817. Baggage Truck. Tracy V. Buckwalter, Altoona, Pa. Filed July 6, 1910. Serial No. 570,554. (Low-frame electric industrial truck.) 4 claims.

1,072,818. Traction-Wheel. Tracy V. Buckwalter. Altoona, Pa. Filed Jan. 4, 1912. Serial No. 669-327. (Low castor wheel with plurality of rubber treads.) 4 claims.

1,072,824. Power Steering Gear for Traction Engines. Harry C. Clay, Columbus, Ind., assignor to Emerson-Brantingham Co., Rockford, Ill., a corporation of Illinois. Filed Dec. 26, 1912. Serial No. 738,736. (Friction drive for steering gear.) 9 claims.

1,072,834. Transmission Mechanism. Henry Devlin, Bay City, Mich., assignor to The M. Garland Co., Bay City, Mich., a corporation of Michigan. Filed Sept. 25, 1912. Serial No. 722,219. (Sprocket and chain reduction gearing.) 4 claims.

1,072,851. Motor Vehicle. Russell Huff, Detroit. Mich., assignor to Packard Motor Car Co. Detroit. Mich., a corporation of Michigan. Filed Nov. 23. 1912. Serial No. 733,127. (Motor front end support and fan drive.) 7 claims.

1,072,860. Explosion-Engine. Charles Y. Knight, Chicago, Ill. Filed Feb. 4, 1910. Serial No. 542, 100. (Knight sleeve-valve motor.) 17 claims.

1,072,875. Carburetter Mechanism. Milton I. Sammons, Kansas City, Mo. Filed May 29, 1913. Serial No. 770,680. (Means for generating steam for mixture with gas.) 12 claims.

1,072,876. Gage for Tanks. Edward S. Savage. Rochester, N. Y. Filed July 31, 1912. Serial No. 712,535. (Gasolene gauge operated by float.) 8 claims.

1,072,894. Condensing Apparatus for Steam Motor Carriages. Charles C. Worthington, Dunnfield. N. J. Filed Jan. 27, 1909. Serial No. 474,582. (Radiator-type steam condenser.) 29 claims.

1,072,907. Automobile Tire Inflating Mechanism. Lester L. Brooks, Falls City, Ore. Filed July 26. 1911. Serial No. 640,661. (Tire inflating system permanently installed in car.) 2 claims.

1,072,909. Tire Support. Louis E. Cadwell, New York, N. Y. Filed March 3, 1913. Serial No. 751, 859. (Device for carrying tire on demountable rim.) 5 claims.

1,072,913. Change Speed Gear. Arthur Thomas Collier, Sr., St. Albans, England. Filed Feb. 18. 1913. Serial No. 749,236. (Magnetic variable speed system.) 18 claims.

1,072,946. Water-Cooled Internal Combustion Engine. Knut Jonas Elias Hesselman. Stockholm, Sweden. Filed March 8, 1912. Serial No. 682,400. (Water-jacketed cylinder head.) 1 claim.

1,072,949. Rotary Valve. Max Jaeger, Mount Vernon, N. Y., assignor to Jaeger Rotary Valve Motor Co., Mount Vernon, N. Y., a corporation of New York. Filed April 1, 1912. Serial No. 687,566. (Rotary overhead valve.) 11 claims.

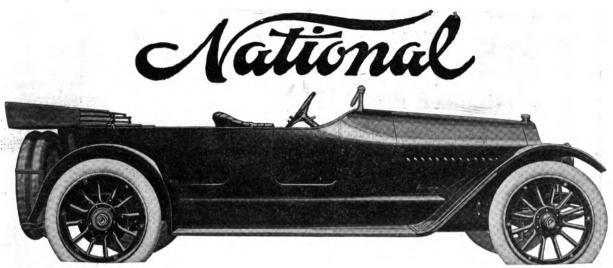
1,072,961. Igniter. Gerard Barnes Lambert. New York, N. Y. Filed June 12, 1912. Serial No. 703. 221. (Electric gas-lighter.) 13 claims.

1,072,979. Vehicle Wheel. Frank O'Neill, Toledo. Ohio. Filed Oct. 24, 1911. Serial No. 656,479. (Springs between inner and outer rims.) 5 claims.

1,073,004. Vehicle License Tax. Ahram Wakeman, New York, N. Y. Filed Oct. 4, 1912. Serial No. 723,921. (Tag with colors designating numbers.)

1,073,049. Vehicle Wheel. Claes G. Johanson, Dorchester, Mass., assignor to Jennie W. Gooding, Providence, R. I. Filed May 9, 1912. Serial No. 696,259. (Wheel with Spring Hub.) 6 claims.





# "You don't have to raise the hood"

ATIONAL owners enjoy complete abandon of worry about mechanical parts of their cars. This confidence is found only in the perfected quality of National cars.

W E build whole cars—the name National guarantees them. Every National car is built as a unit—every mechanical part operates harmoniously to produce satisfactory results. You leave the responsibility for the National mechanical construction to our years of experience-for-get that there are gears and machinery operating beneath your soft cushions. You rest in comfort and give thought only to the ease and joy of

#### You can buy over telephone

ATIONAL owners buy performance and not specifications— they can buy their new National's over the telephone.

We sell our experien ability, responsibility and our guarantee—not a mere job of assembled wheels, axles, gears and Parts. That's why you don't have to raise the hood to buy a National.

#### Lavish in comfort

BEAUTIFUL, economical, efficient and lavish in comfort—this car is the climax of the National's success in car building since its ploneer beginning.

#### Brief Specifications-National Six

Brief Specifications—National Six

MOTOR—Six-cylinder, 3¾ x 5½ inch, cast en bloc. Tire pump, integral part of motor. Clutch, self-contained aluminum cone. Starting and lighting, electric two unit system. Transmission, sliding gear selective type, three speeds forward, one reverse. Gauge 56 inches. Oiling, crank case, constant level, force feed, with gear driven pump. Ignition, high tension, dual magneto with storage battery. Tires, 36 x 4½. Firestone demountable rims. Air pressure gasoline feed, generated by small pump in crank case. Capacity, 23 gallons. Automatic carburetor. Two sets of brakes on 16-inch rear wheel drums. Bevel gear drive through straight line shaft with universal joints and torsion member. Full floating rear axle. Left side drive. Access all four wide doors. Single lever in center controls all speeds. Haff elliptic springs, front, special National Construction, rear.

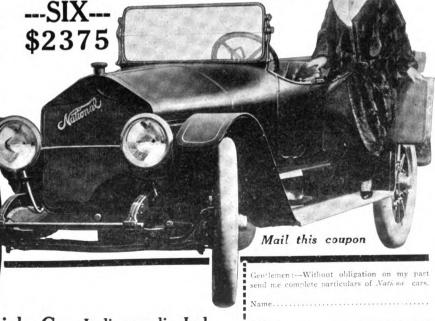
EQUIPMENT—Top complete with side curtains and boot, ventilating rain vision windshield, extra Firestone rim, electric lighting and starting systems 12-in. double buth electric headlights, electric license tail light, Warner speedometer, electric horn, tools and jack.

#### National 40

HE National 40 is our staple car. Its years of marvelous success makes it stand out with silhouette distinctiveness against the back-ground of all other cars. We believe this is the best all-round automobile ever made. We build on the series basis; every day begins a new year. We do not upset everything by rushing into yearly models with calendar seasons. We build on a constant sysaccumulated

tem of improvements. The National is the product of years and gle season. This year for this car. essential features. series V-3 embodprovements. Five \$2750 to \$3400

not of a sinis the third in all its This new ies all immodels,



National Motor Vehicle Co., Indianapolis, Ind.

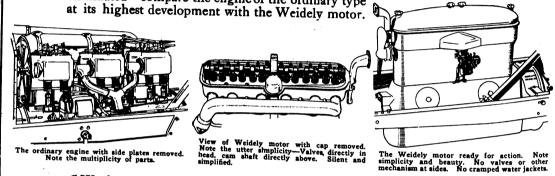
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# The Weidely Motor

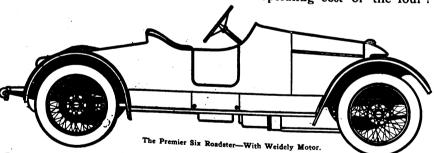
#### A Scientific and Practical Application of Proven Ideas

AU THORITIES have always agreed that the domed, valve in the head motor is the most efficient provided that certain cumbersome mechanisms could be simplified—the Weidely motor not only simplifies, but elminates—other valve in the head motors have been cluttered with rocker arms, heavy rollers and push rods which create fractional losses and absorb a vast amount of power.

Dy placing all the valves in line, operated by a single cam shaft in turn operated by a single vertical amidship shaft with extra large gears—the noise, loss of power and mess of cumbersome parts has been eliminated—compare the engine of the ordinary type



We do not claim the supernatural when we decrease your mileage cost 40%, the other fellow is wasting the difference between what we get and what he gets. Does a saving of over 40% of operating cost interest you? Would you have the flexibility of the six with operating cost of the four?



Mr. Dealer would you rather handle a car which will be obsolete next year or the car which made it obsolete.

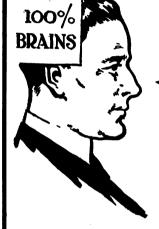
■ Reliability is no longer questioned among standard cars—economy cost of operation is what the buyer is concerned about today. This car has an operating saving of over 40% and has speed far beyond the ordinary.

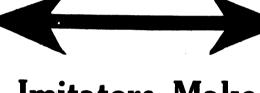
# THE PREMIER MOTOR MANUFACTURING COMPANY Indianapolis, Indiana



Two Faces May Look Alike, But How About the Insides Behind the Faces?











but contain only 80% of Battery brains to compete with the Character's 100%.

And it's the brains put into construction—the insides of the battery, that count—that make all the difference between a good battery and a poor one.

Don't experiment—it's unnecessary—we have done the experimenting for you—and when you consider that the consideration that the mobile manufacturers, doesn't it look like an absolutely safe battery for you to adopt for use with your Electric Lighting and Starting equipment?

### WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd Street. Detroit Branch: 1191 Woodward Avenue.

Chicago Branch: 2241 Michigan Avenue.

San Francisco Branch: 243 Monadnock Building.

Indianapolis Branch: 438 and 439 Indiana Pythian Building.

Service Stations in all principal cities in the United States, Canada and Mexico.

(81)

. , laureate of the gentle craft. "Here Hans Sachs, . . . . . . . . . , laureate of the gentle craft "Wisest of the Twelve Wise Masters, in huge folios sang and laughed.



# **Ball Bearing** Patents and

a timely talk on these topics

By J. S. BRETZ

As a New Year's greeting and gift to the whole industry. We modestly and unaffectedly offer Judge McPherson's classic decision in our favor, handed down almost on the very verge of the dawn of 1914, in re—The Hess-Bright Mfg. Co. (H-B) and Deutsche Waffen-und Munitions Fabriken (D-W-F), Complainants, vs. Fichtel and Sachs (F. & S.), Defendants, for alleged infringement of Conrad's Ball Bearing Patent, No. 822,723.

The learned Judge, sweeping aside all the sophistry and casuistry of the plaintiffs' hired experts, evidently regarded the suit for patent infringement as one of "Lex apparens," because in this fine legal sense the plaintiff is obliged to make his right clear by the testimony before he could summon the defendant.

Judge McPherson in his opinion says—and he thinks epigrammatically—

"But I think it clear that if the validity of the patent (Conrad, H-B, D-W-F) be assumed I cannot treat it as a pioneer.

"The plaintiffs do not assert, and could not successfully assert, that ball bearings were invented by Conrad. In 1904, when the application was filed at Washington, every element contained in the patent was well known—concentric rings, balls or rollers, and spacers or spreaders."

"It was not to prevent friction between adjacent balls, but to make a unitary structure, that he used the spreader," or a "crescent-shaped space would develop, and the bearing would disassemble."

"I do not think it necessary to discuss the patentability of the device, and I am not prepared to follow the plaintiffs' experts, and to give the patent a construction now that

makes it cover any ball bearing whatever."
In conclusion, Judge McPherson tersely

summed up the case as follows:

"I think the defendants' supplemental brief summarizes accurately the material differences between the patent and the defendants' bearings:

"There are three features which the Conrad (H-B, D-W-F) patent has pointed out and emphasizes as characteristic of his alleged invention. They constitute his invention. They are:

"(1) Continuous, unnotched, and unrecessed rings;

"(2) The limited number of balls (only as many balls as can be inserted by eccentrically displacing the rings plus perhaps

one), and "(3) Distributing means, necessary to prevent the bearing from falling apart, and having that function.

'The defendants' bearings (F. & S.) lack each one of these characteristics and, on the contrary, contain its exact opposite:

"(1) Notched, recessed rings;
"(2) A large number of balls (from one to several more than could be inserted by displacing the rings eccentrically), and

"(3) A ball-spacing device, which is not necessary for preventing the bearing from falling apart, and has no such function."

"Without further discussion I state my opinion to be, that the defendants do not infringe; and if this conclusion be correct, the plaintiffs must fail. The defense of laches, which would otherwise need consideration, will not be dealt with."

"A decree may be entered dismissing the bill at the costs of the plaintiffs."

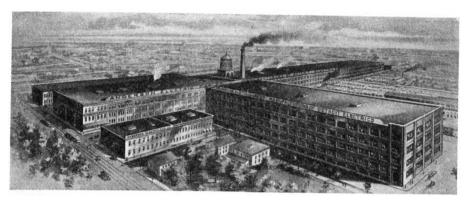
We congratulate the industry upon our success, as the American representatives of Fichtel and Sachs, for at our own expense we defeated this attempted ball bearing patent monopoly—for their success would have meant a large royalty fee added to the cost of not only every imported ball bearing, but every American made ball bearing as well—really a tax upon exact was of ball bearing as well—really a tax upon exact was of ball bearing. ball bearing as well—really a tax upon every user of ball bearings, thus retarding the mechanical, industrial and competitive development of the ball bearing, the world's best anti-friction device.

We are sending to the industry by mail, complete copies of Judge McPherson's full decision in this case

and from which we have quoted briefly above. Should you be further interested, we will be pleased to send

you a copy upon request.





Factory Where the Detroit Electric is Built

# Biggest Electric Car Factory of Them All

Dealers: The next time you are in Detroit, visit the factory of the Detroit Electric. It is the largest in the world—and the most completely equipped—devoted to the manufacture of electric pleasure vehicles. It produces more cars than any other electric vehicle factory. It produces better cars than any other electric vehicle factory.

It is a revelation to observe how the Detroit Electric is built, particularly if you chance to be among those who believe that "an electric is just an electric." For there is

a difference between electrics; and one distinction, broadly speaking, lies between the car that is manufactured and the car that is merely put together.

Quality is inherent in the Detroit Electric. A trip through our plant will readily convince you why. On every hand you will see evidence of the superiority of accurate machine work instead of near-accurate hand work and black-smithing methods.

All parts of the Detroit Electric are built in the Detroit Electric factory—including the bodies, motors, controllers, rear axles, front axles, batteries and wheels. We build our own jigs and tools.

To do this we have an equipment of machinery and devices second to none.

We are constantly adding new machinery of the most approved and up-to-date type whenever advisable. This is possible and practical because the sales of the Detroit Electric factory

are more than double the sales of any other electric. Larger production means better workmanship; lower manufacturing cost; lower selling cost.

Whether you are a gasoline car dealer, or an electric car dealer, the great Detroit Electric factory compels interest.

Write for the new beautifully illustrated catalog of the Detroit Electric and for information about our opportunity for dealers.

# Anderson Electric Car Company DETROIT, MICH., U. S. A.

ELECTRIC

**Builders of The Detroit Electric** 

Largest Manufacturers of Electric Pleasure Vehicles in the World

## Receiver's Sale Automobile Factory

HE property of the Amplex Motor Car Company of Mishawaka, Indiana, may now be bought at private sale, subject to the approval of the Judge of the St. Joseph County Circuit Court; or, in the event of no sale being made prior to January 20, 1914, the property will be offered at public sale—as a whole, or in such parts as may be deemed expedient and not detrimental to a reasonable sale of the remainder.

Location . . On L. S. & M. S. Main Line at Mishawaka, Indiana, with private switch to property. Size of Land 15 acres. Railroad frontage 1305 feet, depth 550 (Valued by Company at \$15,000.00) feet. All city improvements, except pavement. Sixty thousand square feet of floor space. Brick-(Cost of Buildings \$63,704.00) mill construction, except test sheds, boiler room, etc. Main buildings 385 ft. by 80 ft. and 250 ft. by 80 ft. Fully equipped with Automatic Fire Protection, Electric Power, Heating, Lighting, Compressed Equipment (Cost of Equipment \$22,250.00) Air, Sewer and all underground service, Shafting Equipment, Etc., and Office Equipment. Machinery and Tools Best available for Automobile Engine service, or (Cost of Tools, Etc., \$75,350.00) for any medium machine shop production. Merchandise, Stock, Etc Finished and partly finished for Amplex Cars; (Inventory on basis of Company's raw supplies are standard; over 500 Amplex Cars Cost and Records, \$123,750.00) are in use. Parts are available to complete about 15 cars, with other parts available for a number of standard type Four Cycle Cars.

This factory made the great "Valveless Amplex," admittedly the best all-around-car on the market for Cross Country and hard driving—a chassis that is not surpassed by any car of its class—equally available for Four Cycle Engines.

Please understand this: The difficulties of the Amplex Motor Car Company were not due to the failure of the two-cycle engine principle. It stands as a successful demonstration of a two-cycle Valveless Engine, and it only needs a practical business management to make the business a trade success for pleasure or utility cars.

Old owners are more enthusiastic over the Amplex Car as the years go by, because they withstand the most severe road grief.

This plant is exceedingly well located for the manufacture and distribution of Automobile Trucks, Gas Engines, Auto Motors, Machinery, (except that requiring crane service, etc.).

This is an exceptional opportunity to acquire a plant convenient to the great and growing manufacturing section of the Central West, situated 90 miles from Chicago, and in the heart of the St. Joseph Valley—an industrial center without an equal.

Negotiations may be started at once as it is my intention to recommend an early sale as soon as a satisfactory bid is received. The plant may be inspected at any time.

Everything is in first-class shape and ready for immediate operation.

There is a bargain here for somebody, or some firm. Address:

M. W. MIX, RECEIVER
AMPLEX MOTOR CAR COMPANY
1 Byrkit Avenue
MISHAWAKA, INDIANA



The Tread that makes the Brake

SOURCE CONTROL CONTROL

Five Bars and a Cross Tie-the Safety First Symbol

Five thick, tough Goodrich rubber fingers-

They dig down through mud, slush and ooze; they clean and grip the road. They stop the skid before it starts. They give you lower-cost mileage because of the extra thickness of rubber at the point of contact.

# h Safety **Ti**

Best in the Long Run-Best in the Short Stop

Don't experiment. Don't take chances. Look for the five bars and the cross-tie when you choose a nonskid tire. Read the reduced prices below. Better still, tear out this price list and hand it to your dealer.

Don't pay more than the prices named here for the accepted standard non-skid tires:

Size			Smooth Tread Prices	Safety Tread Size			Smooth Tread Prices	SafetyTread Prices	
30 x 3			\$11.70	\$12.65	34 x 4½			\$33.00	\$35.00
$30 \times 3\frac{1}{2}$	-	-	15.75	17.00	35 x 4½			34.00	36.05
$32 \times 3\frac{1}{2}$		-	16.75	18.10	36 x 4½	-		35.00	37.10
33 x 4	-	-	23.55	25.25	37 x 5		-	41.95	44.45
$34 \times 4$			24.35	26.05	38 x 5½		-	54.00	57.30

Dealers almost everywhere have Goodrich Tires in stock or can get them for you from one of our branches or depots.



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There is nothing in Goodrich Advertising that isn't in Goodrich Goods

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### Dealers:

# I want to tell you of my new car and of my plans

THIS announcement to dealers is not only to tell of our reentry as automobile manufacturers, but to make a declaration of the policies to which we pledge ourselves in the upbuilding of the Briscoe Motor Company, which our faith tells us is to be one of the world's prominent automobile companies.

We believe that the policies which we adopt and the ideas upon which we build, will be governing factors in bringing to a full development the business we are now founding.

The writer of this announcement is the Briscoe who founded the Briscoe Manufacturing Company; who with David Buick built the first Buick car; who with Jonathan D. Maxwell organized the Maxwell-Briscoe Motor Company, and who with Horace DeLisser organized the Ajax-Grieb Rubber Company. Of all these successes I am justly proud.

The writer was also instrumental in the organization of a holding company to which was sold the Briscoe Manufacturing Company and the Maxwell-Briscoe Motor Company. This turned out to be a business mistake, but if there should be any business man who has never made a mistake, then it is his privilege to criticise and pass judgment.

The car which we have named the "Briscoe" has had an interesting history. My brother and myself, and engineers associated with us, have planned and studied and worked for the development and perfection of this car. I believe that no car yet has had more study and work put upon it in its designing and try-out stages.

In the Fall of 1912 we went to France, taking with us two American engineers. There collaborating with French and German engineers we were free to work out our ideals unhampered by any distracting influences. Our first car was running in May last. We "banged it around" unreservedly, cruelly. We had built so well that there were but few changes necessary, yet we made a second and a third car, reaching finally, we believe, practical perfection in the medium sized type of motor car.

We returned home confident that we have a carefully worked out automobile; one that is influenced by European design insofar as European design lends itself to more artistic refinements and more enduring qualities.

We offer a car that is tried out; one which we b-lieve is as near perfection as a car can be. Our manufacturing arrangements are splendidly made, and in a way that insures a thoroughly good product.

oughly good product.

In Jackson, Mich, are the Lewis Company's plants. This group of plants is equipped with over \$1,000,000 worth of the best automobile making machinery. There is a motor plant 70 x 400, three stories; axle plant 250 x 250; a large and thoroughly equipped drop forge plant; a spring plant, one of the country's best; a most efficiently equipped crankshaft and camshaft plant. All of these are grouped together in the same 30 acre tract. They are supervised by experts in their particular lines. They deserve and enjoy a splendid reputation for high quality production. We are happy to announce that we have made an alliance with the Lewis Company by which they are to be the manufacturers of our complete chassis, thus making it possible for us to enter the automobile field not only with a tried out car, but with tried out factories.

#### Our Policies

ET us pass now to the question of our company's policies, that you may know what to expect should you become a seller or a user of the Briscoe Car.

#### Manufacturing

We pledge ourselves to manufacture a thoroughly high quality car, using the best materials, equal to those used in the highest grade and highest priced American or foreign cars. In fact, we propose to produce a small car of as high quality as the best of the large cars. The requirements of every part as to strength and design have been developed by scientific research.

#### Sales

The Briscoe Car will be sold through dealers. The company will establish no branch houses. Dealers will, however, be so closely bound to the company as to insure the most considerate and fair treatment toward owners.

We believe that automobile dealers who have the interest of the user and manufacturer at heart fully earn the selling profits allowed them. We believe therefore that it is to the advantage of the user, the dealer and ourselves that no cutting of prices be permitted. We will, under no circumstances, therefore, continue relations with any dealer who does "cut the price," because we believe that a dealer cannot give good service without a fair compensation.

#### Service

Machinery that runs, wheels that turn, may at times get out of adjustment, or, when occasioned by neglect or actions, some part may need replacement. Manufacturers, therefore, must provide for their cars' dependability. We consider service as a prime requisite of the success of an automobile business, so much so that in forming our organization we are establishing inspection and service departments so as to be equal in importance with our manufacturing and sales departments. Owners of our cars pay "bank" on regular and efficient service.

#### Advertising

We propose at all times to set forth the facts in a conservative and dignified way, in order that the public may have full confidence in our statements.

#### Financial

To produce no greater number of cars than our capital will amply finance. To be satisfied with a growth that will be sound and enduring.

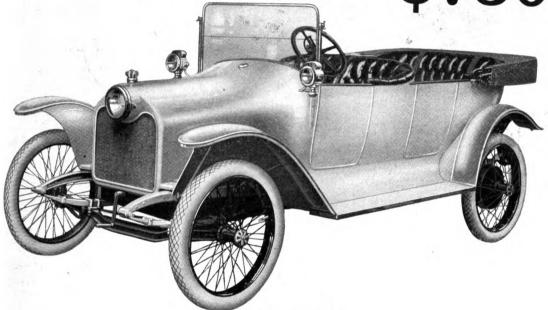
#### Business

To treat all men fairly and with "malice toward none"; to so build up the business we are now establishing that it shall be a house "built upon a rock"; one that will survive to our children and our children's children.

Den Brisca

# This is the New

# BRISCOE Car \$750



#### SPECIFICATIONS

Wheel Base: 106 inches.
Tread Width: 56 inches.
Weight of Car: 1700 pounds.
Axles: Front, Continental type;
rear, full floating.

Capacity: 5 passenger touring car; 2 passenger roadster.

Upholstery: High quality leather.
Painting: French grey.

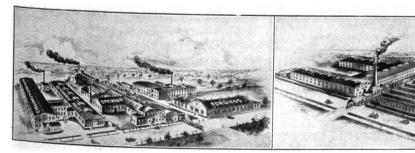
Motor: Bloc "L" head type. Size Cylinders: 31/3 x 51/8 (80 x 130).

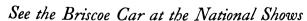
3 Point Suspension.
Transmission: Unit with motor.

Speeds: 3 forward and reverse, selective, center control. Clutch: Leather-faced cone. Steering: Either right or left hand.

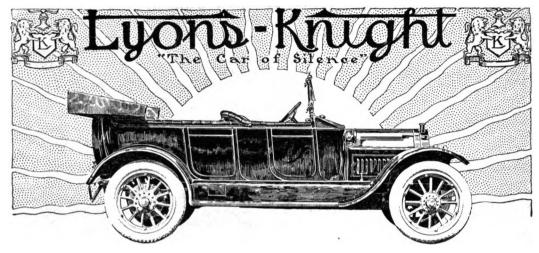
Equipment: Electric lamps, horn, accumulator, demountable rims and tool equipment—\$750. With above and electric lighting generator and electric self-starter, top and boot, windshield—\$900.

Here are the extensive plants at Jackson, Mich., where the BRISCOE Car is made.





BRISCOE MOTOR COMPANY, Broadway and 59th St., New York



# The Dawn of a New Era!

TITH the New Year of 1914, comes a new era in motordom. For twenty years the automobile has passed through the experimental stages in designin materials--in methods of manufacture--in sales and in service. Now comes the Lyons-Knight as the first car of a new era. Because of its many better features it is important that you see and know its value before you buy any car. Here are reasons:

#### A Great Change for the Better

The automobile industry has worked toward this great change for years. The history of other automobile factories proves it. The million motorists of America have learned to know the features that go to make automobile value.

One group of men, backed by ample capital, foresaw this change. They secured one of the greatest manufacturing institutions of America. They brought to their organization the most experienced engineers and production managers. For two years they studied to produce the car to satisfy the experienced motorist. They designed and erected machinery to construct such a car. They anticipated the dawn of the new era.

The result is the Lyons-Knight—a car that is different and better than any other high class car.

This car is backed by a service—by a broad-gauge, business-like sales policy that has secured the finest dealers from the old days of the automobile.

This great, new, live, strong, aggressive organization ushers in the first car of the new era.

#### What the Lyons-Knight Proves

"The Car of Silence" is proof of this new era in automobile design, manufacnew era in automount design, manufacture and value. One ride in it will convince you that its makers have produced something different and better.

The Lyons-Knight is no more a 1914 car than it is a 1918 car or a 1924 car. So staunchly and truly is it built that years of use but make its operation smoother and more efficient.

The lines of the bodies are such that this car will be a standard for years to come. Nothing radical this year or next—always pleasing and up-to-date.

The Lyons-Knight engine is the finest power plant ever placed in any American car. Its makers guarantee its performance to surpass that of any four-cylinder poppet-valve engine of equal size—to surpass a six-cylinder poppet-valve engine of

larger size even in the points of smooth-

mess and flexibility as well as power.

Worm drive brings to this big 130 inch
wheel base car an added smoothness and
balance—freedom from vibration and
sounds the death note of the grinding
gears which marked the finest cars of the old era.

Point after point adds to the proofs that this car is representative of a new order.

#### **Before You Buy**

You will find the great, growing, multiplying Lyons-Knight organization reaching out over the entire country. Its representative in your city is one of the most experienced men you can find. He will put you in touch with the new era in motordorn that motordom that means greater value out

of every dollar you invest.

Lyons-Knight cars will be on display at both the New York and Chicago Automobile Shows. Full information about the great organization and descriptions of the cars themselves will be

mailed you on request.

Know about them—before you buy.

Ask for Catalog and Proots

# LYONS ATLAS COMPANY, Indianapolis, Indiana

Lyons-Knight K-4 Five Passenger Touring \$2900 Car - -

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DEALERS: O'Connell's Garage, Bridgeport, Conn.; Johnson Motor Car Co., 455 Peachtree St., Atlanta, Ga.; Enterprise Anto Co., 407 Baronne St., New Orleans, La.; Louis Helm, Schenectady, N. Y.; A. M. Zimbrich, 21:29 Plymouth Ave., S., Rochester, N. Y.; Jas. K. Burton, 1211-13 Broadway, Nashville. Tenn.; J. H. Sarbecker, Black Earth, Wis.; Everson Motor Car Co., Brownsville. Tex.; The Ziegler Co., 1017 Michigan Ave., Chicago, Ill.; Hamilton Auto Co., N. 19th Ave. and E. Roy St., Seattle, Wash.; Knight Motor Car Co., 236 Avenue C. San Antonio, Tex.; S. R. Blocksom Motor Co. Philadelphia, Pa.; Fred W. Sewell, 1964 Broadway, New York, N. Y.; H. C. Wendel, 18 E. McMillan Ave., Cincilnati, O.; Standard Gas Engine Co., Bradford, Pa.; Geo. C. Brinkman Motor Car Co., 2318 Locust St., St. Louis Mo.; The W. H. McIntyre Co., 305 10th St. Toledo, O.; E. H. Palmer, 57 Broad St., Charleston, S. C.; Worcester, Mass.

Lyons-Knight K-4 Seven Passenger Touring \$2980

# Hupmobile

#### Why "The Car of the American Family?"

A Hup dealer, who had sold 348 Hupmobiles since October First, was last week asked how he did it. This is his answer:

"To be honest, I didn't do it. I can't lay claim to any miracles of salesmanship. As a matter of fact—and I kept a record of the sales—more than 70 per cent. of the so-called 'prospects' were already 'sold' on the Hupmobile—had made up their minds to buy or had been instructed to buy a Hupmobile before they came to my salesrooms at all. The 'family' had 'talked it over' and settled it at the breakfast-table or dinner-table. 'Father' didn't come to pick out a car. He came to obey orders and get the quickest possible delivery of a Hupmobile. That's why I don't recognize any competition."

Also—that's the reason that the Hupmobile is not merely called, but literally IS "The Car of the American Family."

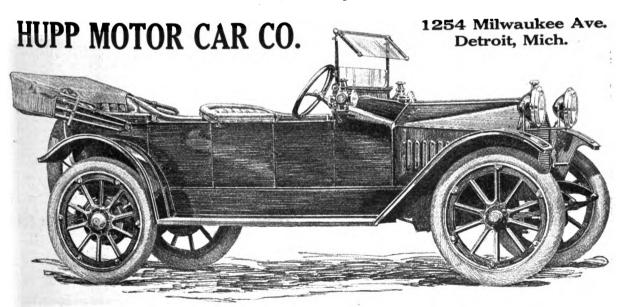
Also—that's the reason that this dealer—along with 1,500 of his brother Hup dealers—had builded an immensely profitable and enduring business upon the Hup Creed—"We believe the Hupmobile to be the Best Car of its Class in the world."

To 1,500 Hup-dealers and sub-dealers that is not a conclusion born of their sentimental interest in the little car—but a logical conviction born of the financial profits of their Hup-dealership and the confidence and affection in which the American people hold the Hupmobile.

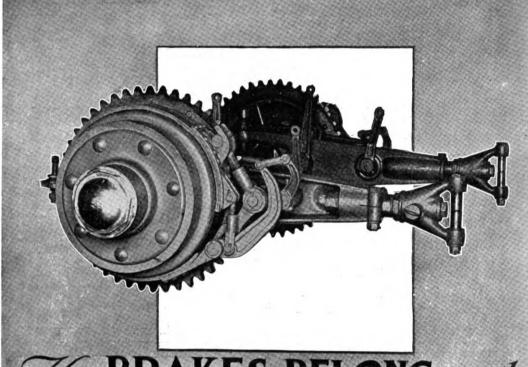
The Hupmobile takes "Father" to the office, the children to school, "Mother" to church, the "grown-ups" to the theater and the whole family on family-outings. The Hupmobile has become literally an American family institution. And as such occupies a place so unique that—as 1,500 Hup-dealers agree—it has by the verdict of the typical American family been lifted entirely out of conflict, comparison and competition with all other motor cars of whatever type and price.

This is the unique position of the Hup-mobile today.

Also it is the unique position of 1,500 Hup-dealers.



The car of The American Family



# The BRAKES BELONG on the WHEELS-NOT on the JACK-SHAF

### Sheldon Double-Brakes-On-The-Rear-Wheels

Has sounded the death-knell of the jackshaft method of braking. It spells finality as to the location of the brakes because it puts them in the only logically correct position—ON THE WHEELS.

SHELDON EQUIPMENT gives you two sets of brakes on the rear wheels. There is always certainty as to the braking efficiency—which is not true of jackshaft brakes. Suppose with your present method, the chains should "jump off" at the critical moment? Could you depend on your single set of rear wheel brakes skidding the wheels?

Take our 3-ton equipment as an efficient example. The outside brake is of the wrap-up type acting on the 18-in. by 3-in. pressed steel drum. The inside brake is of the self-intensifying type. Either brake will skid the wheels. You can take your choice of foot or hand brake. There is a braking surface of 500 square inches. To stop a 3-ton truck with 50 per cent. overload means applying only 200 pounds pressure per square inch to the braking surfaces. On many trucks the Brakes gives a uniform pressure on the whole surface of the drum. This is not the case with any other type of brake.

Can you wonder that ordinary brakes fail to hold at the critical moment?

IN A YEAR OR TWO EVERY HIGH-GRADE TRUCK WILL BE EQUIPPED WITH BRAKES ON THE REAR WHEELS. JACKSHAFT BRAKES ARE ALREADY DOOMED!

THE LEADING TRUCKS ARE COMING TO DOUBLE-BRAKE REAR WHEEL EQUIP

Why not make your truck one of the leaders? It'll be a selling point in your favor. Write us for information on this subject-today.

### SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

Chicago Office: 68 E. 12th St.

Detroit Office: 1215 Woodward Avenue

# ARCHOTLER ESS. SPARK PLUG PATENT SUSTAINED

# WARNING

#### The United States Circuit Court of Appeals Upholds Our Canfield Basic Patent

This decision covers both the petticoat and the conical type spark plugs having a recess deeper than its diameter around the electrode; which feature is found in all the best-known spark plugs now on the market.

Every party who manufactures such spark plugs without being licensed to do so under this Canfield patent and every party who sells or uses such spark plugs not manufactured by us or by any party licensed to sell them under this Canfield patent will infringe this Canfield patent and be liable to a suit in equity for damages and an injunction.

Since the Circuit Court of Appeals confirmed the validity of this patent, we have given a great deal of thought and consideration to the future spark plug business, as our ownership of this patent may affect it.

The keynote of our policy with respect to the manufacturers and dealers in

spark plugs, was fully described in a previous issue of this paper.

It gives us pleasure to state that the following leading manufacturers of spark plugs have been licensed by us under this Canfield Patent:

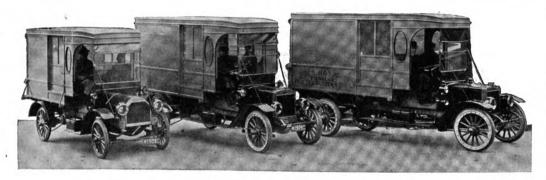
Auburn Ignition Co., Auburn, New York. Benford Mfg. Co., Mt. Vernon, New York. Belvidere Screw & Machine Co., Belvidere, Ill. L. F. Benton Co., Vergennes, Vt. Bigsby Mfg. Co., Cleveland, O. Bosch Magneto Co., New York, N. Y. Champion Ignition Co., Flint, Mich. Champion Spark Plug Co., Toledo, O. Frontier Specialty Co., Buffalo, N. Y. Emil Grossman Mfg. Co., Inc., Brooklyn, N. Y. Hartford Machine Screw Co., Hartford, Conn. Jeffery-Dewitt Co., Detroit, Mich. Lockwood-Ash Motor Co., Jackson, Mich. C. A. Metzger, Inc., New York, N. Y.

N. Y. Mica & Mfg. Co., Auburn, N. Y. Oakes & Dow, Boston, Mass.
Rajah Auto Supply Co., Bloomfield, N. J. Reflex Ignition Co., Cleveland, O. Rex Ignition Mfg. Co., New York, N. Y. Sharp Spark Plug Co., Cleveland, O. Silvex Co., New York, N. Y. Splitdorf Electrical Co., Newark, N. J. Standard Co., Torrington, Conn. V-Ray Co., Marshalltown, Ia. E. Q. Williams, Syracuse, N. Y.

A. R. MOSLER & CO.

Jan. 1, 1914 A. R. MOSLER, President





# Mr. DEALER---You Ought To Know

Before closing your 1914 Contract that WE are entering our Eleventh year of Continuous Manufacturing of Motor Trucks.

WE have more orders on our books for trucks now, than in any December in the history of our business.

# There Are Reasons For It---Think It Over

Write Us Today for Particulars of Our Complete Line of WORM DRIVE TRUCKS

# ATTERBURY MOTOR CAR COMPANY

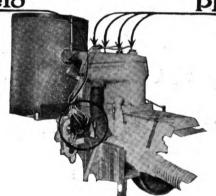
Black Rock, Dept. "M.W.," Buffalo, N. Y.

# Over 44,000,000 Sparks Without a Miss

THAT MOLINE-KNIGHT TEST

WAS ANOTHER BOSCH Magneto Divas

Held under the supervision of the Automobile Club of America Testing Laboratories, from Dec. 19, 1913, to Jan. 2, 1914. A continuous run of 336 hours.



The performance of the ignition system in this remarkable test was more than would be required by the average motorist in two years of most strenuous driving.

OF COURSE

THAT unprecedented test of the Moline-Knight Engine was made possible by the almost unbelievable performance of the Bosch Magneto and the Bosch Plugs.

For two weeks—day and night—without a stop—without an adjustment of any kind, the Bosch Magneto—a type DU 4 Duplex—fired the gas charges without a miss.

### Over Forty-Four Million Continuous Sparks

The Bosch Plugs—the standard type with three crescent electrodes and the Bosch Steatite insulator—withstood the extraordinarily high compression—the extra lubrication and the extreme heat, with their usual resistance—not a miss—and still in perfect condition to repeat the performance.

Be Sure the Car You Buy Is Bosch-Equipt!

BOSCH MAGNETO CO., 224 West 46th St., New York CHICAGO DETROIT SAN FRANCISCO TORONTO

Over 100 Service Stations in U. S. and Canada



# Shatters World's Records for Power and Endurance

For 336 hours the Moline-Knight motor has been on the testing block in the laboratory of the Automobile Club of America, under the supervision of A. C. A. Officials.

During this test it ran without a stop, or an adjustment of any kind to the motor, carburetor, spark plugs or magneto—a feat never before equaled in the history of the motor car industry.

It ran for two weeks, day and night, at 1100 revolutions per minute, averaging 38 H. P.—the A. L. A. M. rating requiring only 29.16 H. P. at this number of revolutions.

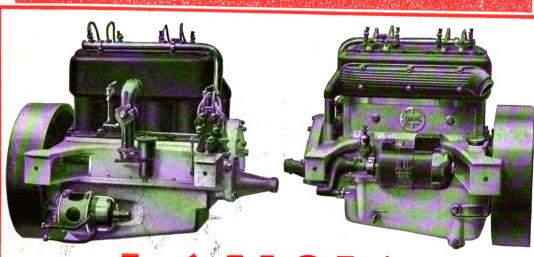
At the end of 336 hours, the speed was increased to 1682 revolutions and developed 53.6 H. P., A. L. A. M. rating, justifying our claim of guaranteed 50 B. H. P.

In its world record breaking feat the Moline-Knight motor traveled the equivalent of 14,700 miles on level at the rate of 45 miles per hour and steadily climbed an 8 per cent. grade 10,000 miles long at the rate of 27 miles per hour, which is equal to 14 trips between New York and Chicago or 5 trips from the Atlantic to the Pacific.

#### \$10,000 CHALLENGE

To all makers of Poppet Valve Motors, regardless of price, piston displacement, horsepower or number of cylinders (Sixes preferred) we challenge you to place your motor in the laboratory of the A. C. A. and duplicate the World's Record made by the Moline-Knight, under the same conditions.

The "Four" that makes the "Six" unnecessary MOLINE AUTOMOBILE CO., East Moline, Ill.



# LANCIA

# The First European Car to be Factory-Equipped With a Starting and Lighting System

Nearly a year ago Sig. Lancia visited nearly every American factory making starters. After careful study and thorough tests, he adopted

### The RUSHMORE STARTER

as incomparably superior to all others in simplicity, ease of operation and power delivered per unit current consumed.

He chose the Rushmore Dynamo, both for its simple and effective ballast coil control by which slipping clutches and moving regular parts are eliminated, and also for the high output at low speeds. The Rushmore Dynamo shown above runs at 1½ times crankshaft speed, and supplies the entire lighting load of

#### 50 Candle Power Headlights

and the usual small lamps, at a speed of only 13 miles per hour in high gear.

European automobile designers are noted for their care and thoroughness. We shall soon be at liberty to announce other European cars on which Rushmore equipment has been adopted as standard.

The Rushmore Starting and Lighting System is factory equipment on the following cars:

Simplex Regal Alco Lancia

Knox

Mercer Crane Stafford S & M

The Rushmore Starting and Lighting System is regular equipment in America on:

Mercedes, DeDion-Bouton, Isotta-Fraschini, Austrian Daimler, Delaunay-Belleville

Have you seen us at the New York Show?

Rushmore Dynamo Works, Plainfield, N. J.

LONDON PARIS BERLIN

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Springfield Metal Bodies are perfect in design, material and workmanship. They are made in a factory of magnitude—well equipped with the most modern machinery, much of it especially devised for the manufacture of metal bodies.

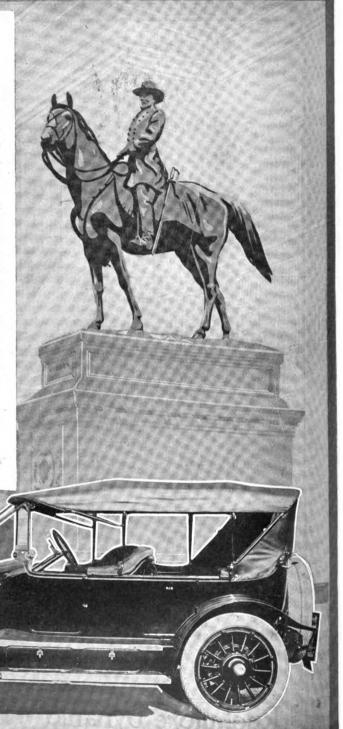
Ten years' experience in the making of metal bodies justifies the claim that these products are far in advance of competitive effort. That these bodies are used on practically all the highgrade cars in this country is proof that may not be disputed.

Springfield Metal Bodies are made in aluminum or steel, including the highest grade limousine, landaulet and town car closed bodies, and touring car bodies in all forms, torpedo, runabout, baby tonneau, etc.

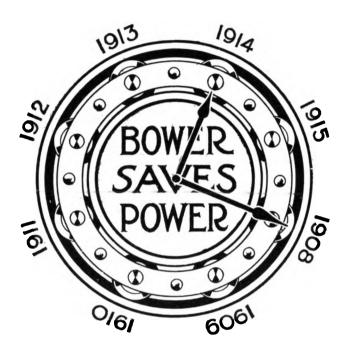
The trade will be interested in information which will be sent upon request.

SPRINGFIELD METAL BODY CO.

Springfield, Mass.







# Progress in Motor Car Manufacture Is Recorded in Bower Bearings

■ Economy—strength—durability—these are the keynotes of modern automobile engineering. These are, too, the characteristics of Bower Roller Bearings. For logicalness of design, for care in selecting and treating steel, for extreme accuracy in every step of their manufacture, they set progressive standards which year by year have marked the heights in automobile construction.

**BOWER ROLLER BEARING COMPANY** 

Detroit, Michigan







Under Auspices of Automobile Chamber of Commerce, Inc.

# At CHICAGO

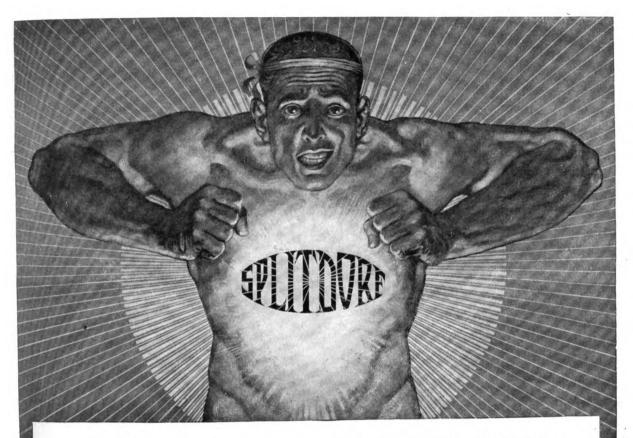
# Coliseum and 1st Regiment Armory

January 24-31

Passenger Vehicles—Parts—Accessories

S. A. MILES, Manager

Auditorium Hotel, Chicago



THE SPLITDORF starting system and lighting generator, which have proven two of the sensations of the New York show, is an evidence of the determination of the Splitdorf Electrical Company to supply the demand for ignition units in their every phase, and supply them, too, better than the best on the market.

The SPLITDORF STARTING SYSTEM is simplicity itself thanks to an automatic clutch of ingenious construction. This SPLITDORF clutch is free—there are no gears to disengage—there is absolutely no chance of it binding or wearing when the motor is running. As the engine stops the clutch becomes automatically engaged for re-starting. The motor, a 12-volt battery, a transmission reducing gear and a switch complete the positive starting outfit.

The SPLITDORF LIGHTING SYSTEM has the cleanest possible installation and is, above all, reliable. Perfect regulation is the keynote to the whole SPLITDORF system, the controller parts incorporated in the generator answering for the output of the dynamo as well as the flow of the current to the battery at all times and under every condition.

Full descriptive matter sent upon request.

### SPLITDORF ELECTRICAL COMPANY

Factory; NEWARK, NEW JERSEY

ELECTRIC CRANKING LIGHTING IGNITION

# A Delco Equipped Car Has Won the World's Greatest Automobile Honors

An American motor car equipped with the Delco Electric Cranking, Lighting and Ignition System has been awarded the famous Dewar Trophy by the Royal Automobile Club of England.

The Delco system itself did not win this highly prized trophy, but it was so severely tested in the trials, and the record it made was so remarkable that some facts regarding it are bound to be of interest to motor car owners.

The trials that determined the award of the Dewar Trophy involved driving 1,000 miles over all sorts of roads at an average speed of 19.5 miles an hour. This is somewhat misleading, however, as an exceptionally high rear axle gear ratio was used throughout the trial and the actual speed at which the electric generator was driven was the equivalent of only 13.2 miles per bour with a standard rear axle.

During the entire trial which lasted 66 hours and 17 minutes, or more than three days and two nights, all electric lights were burned continuously.

Actual driving time, however, was only 51 hours. For over 15 hours all lamps were burned while no current was being generated.

The cranking device was used 130 times; an aver-

age of once every 30 minutes during the entire 66 hours. And at the end of the trial the 1,000 compressions and burn the side, tail and speedometer lights 20 additional hours.

In other words, in spite of the heavy and continuous drain on the batteries for over 66 hours, while the generator was being run at unusually low speed for only 51 hours, the battery was still well charged at the end of the trial.

Another very gratifying phrase of the Committee's report is found in the statement that—"IT WAS OBSERVED AND NOTED THAT THE IGNITION WAS PERFECT THROUGHOUT THE TRIAL."

And yet while this entire performance of the Delco equipment is very wonderful, it is not at all sur-prising to drivers of Delco equipped cars.

More than 75,000 automobile More than 75,000 automobile owners are duplicating, day after day in their own driving the experiences of the Royal Automobile Club Committee.





# T THE SHOWS

you will have an excellent opportunity to examine and test the relative capabilities of the various electric lighting and starting systems.

Complete working models of all types of Auto-Lite instruments will be on exhibition in our booth at each show.

You will find much of importance and interest in our display, and in the technical handbooks which we have just issued for the new year.



odel G Generator Type S. R. 4

#### THE AUTO-LITE LTARTING MOTOR

8 inches in length, 51 inches in o inches in length, 53 inches in width, will crank the largest six cylinder engines at a speed of over 100 revolutions per minute on less than 100 amperes of current.

Can be attached to any automobile engine in either a horizontal or vertical position.

Compactly enclosed in cast iron case, dust and water proof.

#### THE AUTO-LITE LIGHTING GENERATOR

Made in two types—S.R. 4 and V.R. 4

—as shown. Runs at engine speed, directly connected to pump or magneto shafts, no chains, sprockets or gears required. Reaches its maximum output of about twelve amperes at car speed of about eighteen miles per hour.

Besins to readure covered at air miles Begins to produce current at six miles per hour.

Operates at 6 volts-weighs 37 lbs. VPCTARES AT 0 VOIES—WEIGHS 5/7 IUE. V.R. 4 is fitted with standard distribu-tor and timer, and by its use the mag-neto is discarded and generator placed on its bracket.

This generator produces sufficient current to keep a 120-ampere hour battery always charged for starting, lighting and ignition.

#### The Electric Auto-Lite Company

"The Pioneer Makers of the 6-70lt electric system."

TOLEDO - OHIO

New York Detroit Kansas City San Francisco



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#### Gasoline Bill

Net saving per	mon	th			<b>\$12.75</b>
50% more mileage reduces c	•	•	•	. 12.75	
Gross cost of Gasoline per mo				. \$25.50	
					150
Trice per ganon	•	•	•	•	1050
Price per gallon	•	-			st 17 °
5 gallons per day for 30 days	_				. 150 gallons

# YOU will pay for the Empire Gasoline Economizer, next month, whether you buy it or not—

If you use 5 gallons of gasoline per day without the Empire Economizer your gasoline will cost you \$25.50.

If you do buy the Empire Economizer you will save half that cost or \$12.75.

The Empire Gasoline Economizer costs \$10; as long as you are going to pay for it anyway, why don't you try it for 30 days.

The Empire Gasoline Economizer is sold on a Satisfaction Guarantee; if it does not "make good" to your entire satisfaction you may ask us for your money—

You would be satisfied undoubtedly if it saved you \$12.75 on your gasoline bill:

But it does more-

The Empire Gasoline Economizer is as necessary to the efficient working of your car as is your carburetor; it regulates the gasoline and air mixture at the same time you move your throttle.

No carburetor is capable of holding back the rich mixture under certain conditions.

A rich mixture at the wrong time is most harmful to your motor.

The Empire Gasoline Economizer prevents too rich a mixture at any time.

It keeps the cylinder walls and spark plugs free from carbon;

It insures a hot spark at all times;

It keeps the engine cool;

It gives you 20% to 80% more mileage to a gallon of gasoline;

Because it burns air!

As long as you will pay for the Empire Gasoline Economizer anyway, why not have it attached to your car—

You are not one penny loser if it fails to "make good."

You earn its cost before you have to pay for it.

We can make you this proposition because we know what it has done on all makes of cars.

Write now, today, for information: if you might be interested in state rights wire us to send you our fall plans.

Desk 202

#### Brown-Taylor-Greene Company 1323-25 S. Michigan Ave., Chicago



# Fiction Vs. Truth

#### Centrifugal

#### **Principle**

In the centrifugal speedometer a revolving shaft lifts a governor weight. This raises a collar which rubs against a cam, raising the cam; this cam in turn pushes the pointer across the dial to indicate the speed.

The weight is lead; the sam is soft brass; the springs which resist this action soon lose their life. All this means wear and wear means error. This error is magnified from 10 to 16 times by the length of the pointer. These eight to a dozen complicated moving parts are necessary in a centrifugal speedometer, the shaft of which must revolve at a speed two to four times faster than the magnetic type of speedometer.

Would you care to depend upon a speedometer like this?

Magnetic Principle

Under magnetic principle the speed dial of the magnetic type Stewart Speedometer is of aluminum supported by a wheel shaft whose pivot rests in sapphire jeweled bearings, like the bearings in your watch. On this dial are the figures which indicate the speed. This dial fits over but does not touch a circular magnet revolving on the end of the shaft connecting the speedometer with the automobile front wheel. As this magnet revolves it acts on the dial by the invisible force of magnetism only. There are no cams, gears nor other mechanical parts to wear and cause constantly growing error. There is practically only one moving part in the magnetic type Stewart Speedometer, and to this part there is practically no wear whatever, so cannot destroy the Stewart accuracy.

Would you not vastly prefer a magnetic type speedometer like this?

This partly explains why *only* the magnetic type speedometer will tell the truth for life, why more than 85% of all the speedometers in existence are magnetic, and why the magnetic type Stewart has been chosen by the owners of over 1,000,000 automobiles and motorcycles.

# Stewart-Warner Speedometer Corporation,

Factories: Chicago, Ill. and Beloit, Wis.

Atlanta, Ga. Boston, Mass. Buffalo, N. Y.

Chicago, Ill. Cleveland, Ohio Detroit, Mich. London, Eng. BRANCHES:

Indianapolis, Ind. Kansas City, Mo. Los Angeles, Cal. Minneapolis, Minn. New York, N. Y. Philadelphia, Pa. Pittsburgh, Pa. St. Louis, Mo. San Francisco, Cal. Paris, France

And nearly 100 Service Stations

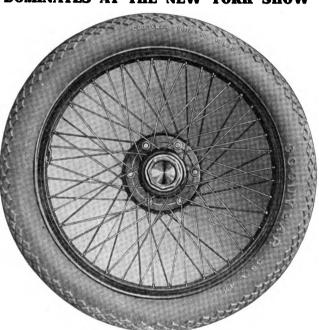
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# The HOUK DETACHABLE WIRE WHEEL

DOMINATES AT THE NEW YORK SHOW

Three times as many makes of cars fitted with THE HOUK WIRE WHEEL at the New York Show than any other.

There must be a reason.



Ten times as many cars fitted with Wire Wheels at the New York Show as a year ago.

Note the trend of the time.

THE HOUK WIRE WHEEL IS BUILT under the Rudge-Whitworth Patents—triple spoke lacing and positive automatic locking device.

THESE ARE EXCLUSIVE features no other manufacturer (except those operating under Rudge-Whitworth Patents) can advocate.

We take pleasure in announcing to the Automobile Industry, that we are the first, to deliver wire wheels to the trade in quantities—and on schedule time. If you are interested in wire wheels—investigate THE HOUK DETACHABLE WIRE WHEEL.

MANUFACTURED BY

#### HOUK MANUFACTURING COMPANY BUFFALO, NEW YORK

FOR

### GEORGE W. HOUK COMPANY

(Licensee under Rudge-Whitworth Patents)

1700 Elmwood Avenue

BUFFALO, N. Y.

The Admitted

# SENSATION

for

1914

-Yes, the only one.

THIS YEAR WILL MARK THE ERA of Wire Wheels.

WIRE WHEELS—THE HOUK—WILL SET the styles for 1914 and 1915, the same as starting and lighting systems, stream-line bodies and other improvements have from time to time.

WIRE WHEELS—THE HOUK—WILL DOMINATE on the latest models as produced by our foremost builders; because the DEMANDS of the Car Owner must be recognized (as one Owner remarked the other day "Houk Wire Wheels are the best shock absorbers I ever had on my car").

HOUK WIRE WHEELS ARE DETACHABLE and easily fitted to any car in use—think of the opportunity offered a DEALER or GARAGEMAN to handle a proposition of this kind.

CAN'T YOU—right now—picture a dozen or more prospects in your own circle of friends, who want Wire Wheels and only need your assurance that they can get THE HOUK?

WELL, THEN—this is your chance to get the HOUK WIRE WHEEL AGENCY in your territory.

OUR PROPOSITION is an equitable one and if your territory is still open—you are in line for it.

NOTE: Detachable Wire Wheels for any make from FORDS to PACKARDS.

MANUFACTURED BY

#### HOUK MANUFACTURING COMPANY BUFFALO, NEW YORK

FOR

#### GEORGE W. HOUK COMPANY

(Licensee under Rudge-Whitworth Patents)

Avenue

**BUFFALO. N. Y.** 







# Leading Dealers of the World Contracted for the "GRANT" Before It Was Even Announced---Why?

#### **SOME GRANT DEALERS**

You Will Recognize These Names As the Big Successes In Their Territories

H. J. KOEHLER SPORTING GOODS CO., NEW YORK CITY. H. J. KOEHLER SPORTING GOODS CO., BOSTON, MASS. LIBERTY GARAGE, PHILADELPHIA, PA. MARTIN-COULTER CO., PITTSBURGH, PA. THE GRANT DISTRIBUTING CO., CLEVELAND, OHIO. EUREKA AUTOMOBILE CO., CINCINNATI, OHIO. PETERSON-KEYES AUTOMOBILE CO., INDIANAPOLIS, IND. GRANT BROS. AUTO CO., DETROIT, MICH. CHICAGO-GRANT MOTOR SALES CO., CHICAGO ILL. THE COMPTON HEIGHTS AUTO & GARAGE CO., ST. LOUIS, MO. MACK GRANT AUTOMOBILE CO., MILWAUKER, WIS. VAL WERNER, JR., MEMPHIS, TENN. EASTERN MOTOR SALES CORPORATION, RICHMOND, VA. W. G. HIRSIG CO., NASHVILLE, TENN. BRICE AUTO CO., MINNEAPOLIS, MINN. WATSON AUTOMOBILE CO., SIOUX CITY, IA. FOURNIER BROS., SAN ANTONIO, TEXAS. S. G. CHAPMAN, SAN FRANCISCO, CAL. TRI-STATE AUTO & SUPPLY CO., GAREAU MOTOR CAR CO., MONTREAL, CANADA. RICHARDSON-ORR & CO., MELBOURNE, AUSTRALIA. WHITING, LIMITED,

And Scores of Others In Every Section of the United States

#### Because---

Early last spring it was rumored that a Standard High Grade, Fully Equipped Automobile, to sell at a price under \$500 was being built. Dealers from everywhere investigated and found the Grant to be even more than they had expected. They were quick to realize the possibilities of a car that embodies all the "up to the minute" ideas in design and construction and the same materials and workmanship hitherto only found on big expensive cars—and at the low price of \$495.

These men knew that the buying public is not satisfied by price alone—the quality must be there, even in a low priced car. As well as quality—the low price must include all the accessories that make for the ease and convenience of the owner—not a price with a long list of extras that run the so-called list price way up.

They found that Grant Cars are built to meet the same exacting requirements in finish and appearance—the same use and abuse as cars selling for five times the price. The Grant has made the high grade car at a low price a reality.

The Grant Motor Company, with ample capital—a splendidly equipped factory capable of turning out 10,000 cars a year—a production and sales organization made up of some of the most practical men in the industry, all financially interested—is in the business to stay.

The men in the Grant organization have been connected with the automobile business for years—they know it from A to Z—designing—buying material—manufacturing and selling.

Their judgment and their ability have placed the first high grade low priced car on the market—the Grant—at \$495.

#### The "GRANT"

#### The Standard Small Car

There is nothing freakish or experimental in the whole car. Every part is standard, the 56-inch tread-4 cylinder motor-cone clutch -sliding gear transmission—shaft drive floating rear axle-full elliptic springs-every unit has been tried out and proven by two years actual testing-not only in the hands of our engineers but in the hands of inexperienced drivers.

The Grant has a decided foreign appearance that gives it an air of distinction and commands attention immediately. The bull nosed radiator-stream line roomy body with moulded turtle back-wire wheels-close to the ground effect-in fact every detail shows the "last word" in high priced construction.

The Grant is the most economical automobile built-an average of 30 miles to the gallon of gasoline and 100 miles to a pint of lubricating-the wire wheels give a greatly increased tire mileage—this means a low cost of upkeep—as well as a low initial cost.

The equipment of the Grant is unusually find and complete—in fact it is equal to the equipment on cars costing three times as much as the Grant-and all furnished for \$495

Dealers: Here is an opportunity to close your territory for the first high grade fully equipped automobile to sell under \$500 that has ever been produced.

A car that embodies the qualities of the highest priced motor cars at the price of the cheapest.

We are BUILD-ING and DELIV-ERING 125 of these CARS THIS MONTH-250 in February-400 in March, etc.

You can see for yourself, the kind of dealers we are getting. Let us hear from you at once.

Interesting literature sent on request.

#### "GRANT" SPECIFICATIONS—Compare these specifications with any car you think of, irrespective of price

MOTOR—4 cylinder, 4 cycle, 2¾ x 4 in. Cylinders and crank case cast en bloc. Inlet and exhaust passages cast integral. Valves enclosed, three point suspension. Develops full 21 H. P. Large valves and drop forged shafts of special alloy steel. The Grant Motor can not be made to knock, advance the spark and throttle levers from the lowest to the highest point at any speed you elect, the motor jumps forward like a race horse.

Inc a race norse.

IGNITION—Swiss High Tension, the accepted standard ignition of the world, superceding in all cars of character, the obsolete battery systems of earlier days.

LUBRICATION—Constant level vac-uum feed, integral with motor, over-coming absolutely lack of lubrication at varying speeds.

CARBURETOR—Mayer, specially con-structed for Grant Motor, dash ad-justment.

TRANSMISSION—Sliding gear, progressive type, two speeds forward, one preverse, integral with rear azle, a compact assembly carried on ball and Hyatt Quiet Roller Bearings, not plain bearings.

CLUTCH—The reliable, leather faced, cone clutch, generally regarded as the most serviceable and reliable type of clutch construction.

STEERING GEAR—Pinion and gear fully adjustable. FRONT AXLE—I beam, drop forged, large knuckles and spindles.

DRIVE RIVE—Propeller shaft with ball joint at end of torque tube.

at end of torque tube.

REAR AXLE—Three-quarter floating.

Load carried on housing, not on
live axle. The live axle and driving shaft of superlative high grade
steel, heat treated. The outer ends
of live axles carried on Hyatt Quiet
roller bearings. Differential of the
two pinion type.

BRAKES—Foot brake, external con-tracting, emergency brake, internal expanding; both brakes on rear wheels. Extra large braking sur-faces with asbestos linings.

PRAME—Pressed channel steel U section of unusual strength and rigidity.

SPRINGS-Front, full elliptic. Rear transverse, shackled back of rear

axle, the best quality of springs obtainable in the American market, infinitely superior to the abbreviated cyclecar cantilever type. The Grant is the easiest riding car in the world, irrespective of name or price.

world, irrespective of name or price.
RADIATOR—Bull Nose English type
providing maximum water capacity
and radiating surface. Thermo Syphon circulation with fan.
CONTROL—Center shift lever, spark
and throttle advance under wheel.
Foot brake and clutch operated with
one pedal.

one pegal.

SPARK and throttle control—under steering wheel (no fixed spark) where the best practice and usage indicates it should be. Advancing the spark at the discretion of the driver will not injure the Grant

GUARDS—Full sized guards of extra heavy gauge steel, graceful in out-line. Complete running boards and mud splashers, admittedly the only type of construction satisfactory to the owner.

WHEELS-28 x 3 wire, English type. TIRES-28 x 3 Bailey tread, clincher. WEIGHT—1075 pounds, fully equipped for the road.

BRAKES—Two, both on rear wheels, generous in size, positive in action.
WHEEL BASE—90 inches.

ROAD CLEARANCE-Ten inches.

BODY — Pure stream line, double doors 18½ in. wide, 32 in. leg room between seat and dash.

COLOR-Body, black; chassis, rich

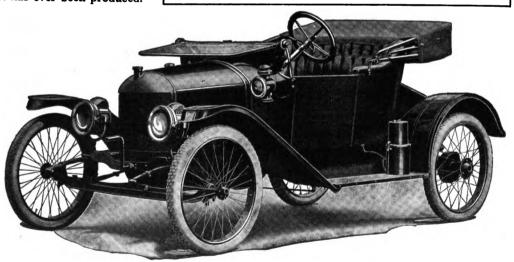
Fred.

EQUIPMENT — Grant equipment is complete. Top and top slip of real mohair, not oil cloth, heavy automobile bows, not buggy bows. Windshield—folding, non-rattling, one-piece, plate glass, not cheap coach glass.

SPEEDOMETER—Stewart sixty mile instrument. Lamps, five. Acetyleme head lights, with generator, oil side and tail lamps. Horn, jack, tire kit, full set of tools. Accessories finished in black enamel and nickel.

EXTRA EQUIPMENT—Full electric starting and lighting with electric horn at reasonable price.

ICE-\$495.00, with complete equip-ment, F. O. B. Findlay, Ohio.



The "GRANT" With Full Equipment—\$495

# Address

# Dept."C" Grant Motor Company, Findlay, Ohio

#### **HESS-BRIGHT LITIGATION**

In order to prevent possible misconception of the legal situation, we ask those interested to bear two facts in mind:

First: The Court's decision in no wise affects the relation of the Conrad patent to bearings of the Hess-Bright type. This question has been already determined by the same Court several times.

Second: The only point involved is whether or not the patent ALSO dominates bearings have go a non-full-depth filling notch. The LOWER COURT has held in the negative, but this is simply the first step to a determination by the UNITED STATES CIRCUIT COURT OF APPEALS, where it will be decided.

With regard to the accusation that we are attempting to monopolize the trade, we point out that at least one other Company has been and is now making notched bearings under license from us.

In any event, our customers may rest assured of our fixed intention to do justice to them and to everyone.

The Hess-Bright Manufacturing Company PHILADELPHIA, PA.

# Quality Mohawk

"THE BEST TIRE-Not big production, not lowest prices."

That is our ambition. That is the policy back of the Quality Mohawk Tire.

### "Quality" is Our Hobby

#### Quality Mohawk **Tires**

We believe you want a Tire that is proof against blow-outs: One that won't crack, won't fabric - separate, won't tread - separate: One that will give long wear and stand retreading.

We make that tire. Smooth and Non-Skid. All types.





#### Quality Mohawk Tubes

We believe, too, that you want a tube that will give service: one that is pure gum: one that won't stretch out in hot weather, won't tear like paper: one that can be patched, and patched again and again: one that will vulcanize and retain its life and strength.

We make that tube. Red and Gray.



### **Mohawk Specifications**

4 inch casings—the size most frequently overloaded.
Fabric: 17¼ ounce Sea Island—the best and strongest made.
Friction: Absolutely pure gum throughout.
Side Strip: Absolutely pure gum—floating stock.
Cushion: Absolutely pure gum—floating stock.
Tread: Straight compound based on finest rubber obtainable—tough and flexible—not an ounce of shoddy reclaimed rubber, or other cheapening materials.
Construction: 6 plies (one extra) and a breaker strip. Full molded, under heavy hydraulic pressure into one solid inseparable whole.
Hand Made: Made under the personal supervision of an experienced man—one who has the reputation of making the best tire in Akron.

We solicit correspondence from Dealers who want the exclusive sale of this kind of a tire and tube

# THE MOHAWK RUBBER CO., Akron, Ohio

New York Branch, 1864 Broadway





No. 251 Lighting Generator



No. 230 Lighting and Ignition Generator



No. 240 Lighting and Ignition Generator

The Westinghouse Electric Systems for automobiles include equipment for all cars---suitable for various applications for most efficient and economical installation.



No. 300 Starting Motor for Fly-Wheel Drive

The "square" design for generators and motors provides ready and sturdy mounting. Generators have magneto shaft height; inherent regulation of current by the windings; output automatically increases when lamp load demands; lesser output to battery when lamps not burning; entirely enclosed.



No. 330 Starting Motor for Crank-Shaft Drive

Starting Motors for flywheel and crankshaft applications, with and without gear sets.

Materials: Cast-steel frames for strength and electrical efficiency; aluminum-alloy end brackets for light weight; "bakelite" insulation impervious to oil, water and gasoline.

Westinghouse engineers offer their services to study and advise your application of electrical equipment.



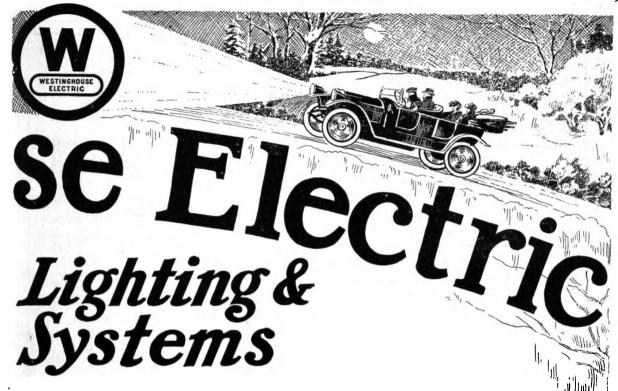
No. 502 Starting Motor for Fly-Wheel Drive

#### To Dealers and Repair Shops

Send us your name and we will mail you a complete set of instruction books on Westinghouse Electric Starting, Lighting and Ignition Systems, and place your name on our mailing list to receive new instruction books as issued. Westinghouse Electric &

East Pittsburgh, Pa

Member Society for Electrical Developmen





Illuminated Dial



Three-Gang Lighting Switch



Starting Switch for Crank-Shaft Motor

A Voltmeter is recommended to show condition of the battery; illuminated-dial and flush mounting styles; dial is black to avoid glare; the action is "dead-beat" permitting accurate reading; rugged and reliable instruments.

Lighting and Ignition Switches of sturdy construction for severe service, providing positive contact with clean surfaces that minimize voltage drop.

Starting Switches—pedal and electrically-operated styles, the latter using a simple push-button switch to start the engine; cast-iron frames for ruggedness; copper contacts; removable terminals for soldered connections.

Fuse and Junction Boxes of heat resistant material, impervious to oil, water and gasoline; enclosed fuses with indicator—avoiding danger of fire from open spark and making easy detection of blown fuse.



Ignition Switch



Flush Type Meter for Wooden Dash



Electrically Operated Starting Switch



Four Circuit Fuse Box

# Manufacturing Company

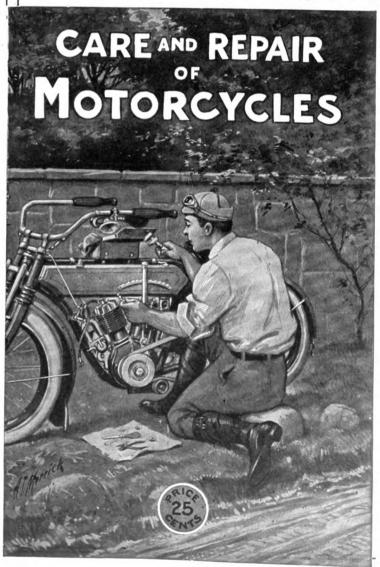
Automobile Equipment Division

"Do It Electrically"

Spend a quarter for this book—save many dollars in repair bills

It is the refriend become the job of trouble not be a me to underst

It is brim fu and suggesti type of moto



-to Handle Spark Plugs which are unconditionally

#### **Guaranteed for Life**

Every plug or set of plugs sold to the user is backed up by an iron-clad legal guarantee signed by the Long Distance Spark Plug Co., which entitles the holder to exchange defective or broken plugs. If any plug goes wrong from any cause whatsoever, whether by accident or otherwise, we will give a new one in exchange.

# proved Long Distance Spark Plugs

are quick sellers. They sell for \$1.50 each but are cheapest in the long run. First cost—only cost. Put up in attractive package for counter display. Good margin of profit for both dealer and jobber. Most motorists buy full set of four in order to get one plug free. Dealers and jobbers are requested to write for our special 1914 proposition. Electrotypes for use in your catalogue furnished

\$5000.00 in Prizes to be Retail Dealers

With every set of Improved Long Distance Spark Plugs sold, the dealer is privileged to take in four old plugs and allow 25 cts. for same. To the dealers who take in the greatest number of old plugs, a prize of \$1,000 will be given. Smaller prizes totaling \$4,000 will be apportioned to other dealers. Every dealer who hustles stands a good show to win big rewards in addition to big profits. Address for full details.

#### 212 South Illinois Street. Indianapolis, Ind.

TO CAR OWNERS—Ask your dealer to show you these Improved Long Distance Spark Plugs. If he cannot supply you, we will send one postpaid on receipt of \$1.50 or five for \$5.00. If full set of four is ordered, we will take in four old plugs, regardless of condition and allow 25 cts. each for same, making total cost for five plugs \$5.00.

The logic of advertising to the dealer first, most and all the time, has been the foundation of nearly every successful advertising campaign conducted in the automobile business

The dealer is a wholesale buyer, either directly or indirectly, of ever meritorious product.

The dealer is more potent in moulding public opinion as to complete cars or accessories than any other individual in the industry.

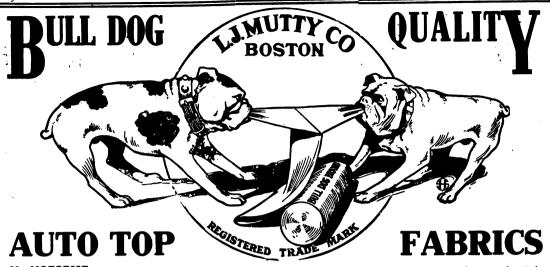
Motor World Is the Dealer's Favorite Trade Paper

#### Motor World Publishing Company

1600 BROADWAY, NEW YORK

W. H. TRIPP, Western Adv. Mgr. 1001 Ford Bldg., Detroit

B. MATHEWSON, Adv. Mgr. 1600 Broadway, New York



If you want genuine top satisfaction, insist on Mutty's NUMOTOR Top Cloth in Bull Dog Quality.

Bull Dog Quality auto top fabrics in all styles of cloth are guaranteed absolutely waterproof.

We made the first mohair cloth ever offered to the automobile trade, and our new fabric styled NUMOTOR is the first of its kind that has ever been offered the trade, and we believe it is the best top fabric in the world. It costs a little more than the average top material, but it

should not make a difference of over \$5.00 to \$10.00 in

we make a seat cover material to match perfectly the lining of NUMOTOR tops. This material can be removed and cleansed without affecting the fabric in any way. Before ordering your top, write us for samples and we will show you why it will pay you to insist on NUMOTOR

for your top.
See our exhibit at the Grand Central Palace—Space

L. J. MUTTY CO.

Boston, Mass.

# Something in the Very Looks

of the



"The Part That Sells the Car"

#### makes both layman and engineer put it in "Class A

As a just and able man shows his qualities in his face and bearing, so a machine, built with care and conscience, to do all it "agrees" to do—and more—shows it in a sort of sturdy beauty in every line and surface. Everyone interested in automobiles should

New York Show Sec. C, 7-8 3d floor Jan. 3-10

at The Shows. THE BUDA COMPANY

Show 4 and 5 Gallery Jan. 24-31

Chicago

FACTORY, HARVEY, ILL., (Chicago Suburb) Address all correspondence to our FACTORY REPRESENTATIVES

**BRANDENBURG AND COMPANY** 

1108 SOUTH MICHIGAN AVENUE, CHICAGO

FORD BUILDING, DETROIT

57TH AND BROADWAY, NEW YORK CITY



### Agency Appointments

DURING Automobile Show Week we expect to appoint agents for Western territory and visit personally Chicago dealers.

This information should be of vital interest to accessory salesmen and the trade in general. It means that territory will be apportioned at that time for an exceedingly profitable article; necessary to, and well within the means of every carowner.

It is the **No-Shammy Funnel** (patented), positively guaranteed to remove all water and dirt from gasoline; thereby eliminating ALL carburetor troubles caused by inefficient fuel. This funnel has been on the market for several years and thousands are in daily use.

Our intensive advertising and merchandising plans for 1914 cannot help but make the proposition distinctively attractive.

Write us prior to January 21st, so that a definite appointment can be arranged for a conference with our Mr. O. C. Foster, who will be present at the Chicago Show.



Applications for territory may be mailed to the Cleveland office at any time, and will be given consideration in the order received.

#### The No-Shammy Products Co.

O. C. FOSTER, Sales Director

511 Hippodrome Building Cleveland, Ohio



# The Standard Lighting System—Electricity

Practically all the new models are "electrically lighted throughout." Look around at the shows and note that nearly every car is equipped with this most satisfactory and efficient method of lighting—and the lamps used are

# EDISON MAZDA Automobile amps

They are backed by MAZDA Service

Irrespective of the lighting system adopted by the car builder, these lamps are part of the original equipment because of the successful and continued service they give with any particular lighting system.

It is this thorough reliability, whatever the conditions or whatever the lighting system, that has made the use of EDISON MAZDA Lamps so general.

A few of the cars using this standard lamp are:

American
American LaFrance Fire Engine
Bailey Electric
Chalmers
Chevrolet
Cole
Columbus
Cunningham
Davis
Dorris
Gramm-Bernstein
Haynes
Imperial
Interstate
Jackson
Kline
Lancia
Locomobile

Marmon

Maxwell
Mercer
Michigan
Moyer
Norwalk
Oldsmobile
Overland
Paige-Detroit
Pilot
Pope-Hartford
Pratt
Pullman
S. G. V.
Seagrave
Simplex
Stearns
Studebaker
Velie
Winton
Indian Motorcycle

If you want the same good service when replacing bulbs, "Be sure the lamps you buy bear the name EDISON."

#### EDISON LAMP WORKS





# "WHITNEY" KEYS

for
"The Woodruff System of Keying"

"Whitney" Keys are packed in boxes containing 100 assorted sizes, selected especially for the benefit of the repair trade.

Every garage and repair man should have a box of these assorted keys on hand. They cost little and are very convenient. They may be purchased from the leading jobbers of automobile supplies or we can supply same promptly from the factory.

## THE WHITNEY MFG. CO.

Manufacturers of

High Grade Driving Chains. Keys and Cutters for the Woodruff System of Keying Hand-Feed Milling Machines

# **NOTICE**

# THE R.C.H. CORPORATION-BANKRUPT

Makers of the well known R. C. H. car, have one of the finest automobile manufacturing establishments in the world for disposal through their liquidators, The Todd, Frank, Friedeberg Company, Ltd., of Detroit, Michigan.

There is in this property over one million dollars' worth of new and splendid equipment and material—16 acres of highly desirable ground, numerous well constructed buildings, completely equipped with the finest and latest machines.

The machine shop has been pronounced by visiting engineers and manufacturers to be the finest equipment they ever saw. The forge is also completely furnished with machines that would do credit to one of the biggest car manufacturers in the land. The assembling building, the paint shop, the foundry, the power house, everything is ready for manufacturing a motor car from the ground up.

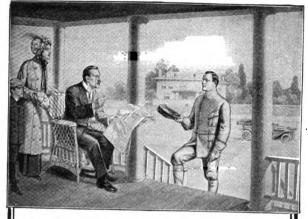
There are now 10,000 R. C. H. cars running and

they are adding by their sound construction and good performance to the enviable reputation the R. C. H. Company always maintained before their days of financial difficulty. The parts department for these cars is at present in a highly profitable condition.

This splendid equipment must be sold in whole or in parcels. We prefer, however, to turn over this plant to a corporation that wishes to keep it intact, and in order to do this we are in a position to assist in financing a new corporation.

The representatives for the liquidators, Mr. Chas. D Todd and Mr. Theodore Friedeberg, may be seen at the Hotel Knickerbocker, New York City.

THE TODD, FRANK, FRIEDEBERG CO., Ltd., Liquidators
Detroit, Michigan



# Get Weed Tire Chains at Once!

"I know you are a careful driver, but it is best to adopt every device to prevent accidents.

"I can't afford to take any chances. We have all foolishly depended on rubber alone long enough. It's time to awake to our responsibility. So go at once and buy a complete equipment of Weed Chains and never start out without them when the roads or pavements are slippery or greasy."

# Weed Anti-Skid Chains

Insure Against Anxious Moments



Probably no other device has done so much to raise the factor of automobile safety as WEED CHAINS. They are the proverbial "ounce of prevention" against skidding, the cause of over ninety per cent of all automobile accidents—Life Insurance and Accident Insurance Companies strongly endorse them and recommend their use. Taxical Companies for their

own protection, *insist* that their drivers put them on when the streets are wet or slippery.

# **Increasing Demand**

for WEED CHAINS makes them the **most profitable** Automobile Accessory handled by Dealers—Quick and Steady Sales—No Dull Seasons—No Dead Stock—Easily Handled—Liberal Profits—Universal Satisfaction.

Attractive, convincing, decorative, lithographed hangers supplied to dealers upon request.

At all dealers selling Auto Supplies

Weed Chain Tire Grip Co. New York

Manufactured in Canada by

Dominion Chain Co., Limited
Read Offic.: Shaughnessy Bidg., Montreal, Can.



# Do Your Own Welding!

Save time and money on repair jobs! Don't send out your repair work. You can now do it yourself—and save a lot of time for your customers and money for yourself.

Don't buy and wait for new parts! You can make old parts as good as new by using the

# Cox Welding Outfit For Welding and Carbon Removing

Complete in every detail. Will do every possible welding job. Very simple in construction. Can be used on parts of iron, steel, brass, bronze and aluminum. Any average mechanic can become adept in its use in a short time. We furnish complete instructions with each outfit. It is safe and sure. Every job you do means—Extra Profit for You.

The outfit will pay for itself many times over. It means quick repair work—and all of it done in your shop!

The Cox Outfit is not only excellent for welding, but it can also be used to Quickly and Completely Remove Carbon from Cylinders!

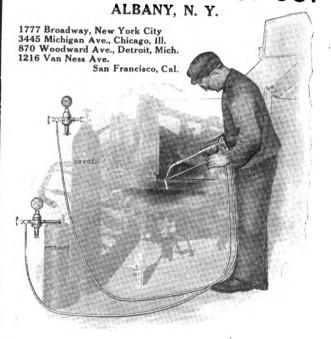
Thus you have a dual outfit—a profit maker two ways! Its use is doubled. It saves time in two ways—and produces two profits!

Send for free Catalog and full information—NOW.



SEE OUR EXHIBIT AT THE NEW YORK SHOW

COX BRASS MFG. CO.





#### The Motokart Is Not A Cyclecar

in the generally accepted meaning, it is NOT a miniature pleasure car converted to commercial usage. It WAS the first smaller than standard four wheel parcel delivery wagon built in the United States. IT IS STILL the only car of its type built exclusively for commercial purposes. A chassis ideal for pleasure usage can never successfully be made the basis for a delivery car, the difference in requirements is too radical. We know nothing about pleasure cycle-cars, but have devoted ourselves exclusively to the purpose of producing the best possible parcel delivery car at a price within every storekeeper's reach—\$400.00. Let us tell you how well we have succeeded.

#### Tarrytown Motor Car Co., Inc.

Factory: Tarrytown, N. Y.

General Offices: 1790 Broadway, New York City

Agents wanted in all unoccupied territory

Space Contributed by Motor World

## The Lincoln Highway

(Copy Contributed)
By
Elbert
Hubbard

A DUSTLESS, mudless, skidless highway from the Atlantic to the Pacific—that's why I should cease to worry!

Behind the project are over 100 firms and corporations who do big things. Over \$5,000,000 are already pledged or in hand.

Subscriptions are asked from every cheerful good sport who owns an automobile and loves the smell of gasoline. And doesn't that take in pretty nearly all of us?

Any man who owns a machine and doesn't get in on this is a Piker from Pikersville.

It's a privilege to get in this glorious company and I wish that every reader would send a five spot or more today.

Enjoy the sweet satisfaction of knowing that you are in this glorious company who are making the world a fit place for gentlemen to live in.

Good roads are the most unselfish enterprise in the whole world of human betterments.

Send your contribution to

LINCOLN HIGHWAY ASSOCIATION DETROIT, MICHIGAN.

Radiator Emblem, Membership Card and Certificate Sent on Receipt of Remittance.

# Dealers and Accessory Manufacturers Will Profit Greatly

by keeping abreast of the rapid development of the "two-wheeler."

The Bicycling World More Motorcycle Review

Published Every Tuesday—\$2.00 a Year

This publication records weekly all that is of interest to the trade and to the rider. (If you aren't fully acquainted with the paper and the possibilities offered by the field it covers send for free sample copy.

BICYCLING WORLD AND MOTORCYCLE REVIEW, 1600 Broadway. New York

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atis 100 big ict

2

American made for American trade

# **NEW DEPARTURE**

Guaranteed

# BALL BEARINGS

To facilitate supplying demand for garages, dealers and owners, for New Departure ball bearings, the following distribution agencies are announced, where stock of these bearings is carried.

The New Departure Mfg. Co., Bristol, Conn.

Western Branch, 1016-17 Ford Bldg., Detroit



can solve your clutch problem

If you are one of those concerns who are rather keen on details you know that the CLUTCH talks.

It's the most frequent point of contact between driver and car. KONIGSLOW'S CLUTCHES will speak as forcefully for you as they do for KONIGSLOW.

Don't wait till you are ready to place orders---write today to

> KONIGSLOW CLEVELAND

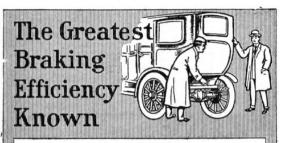
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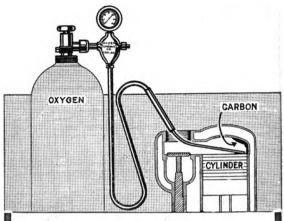
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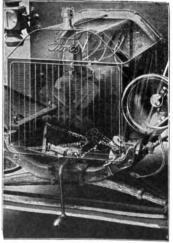
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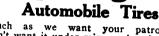
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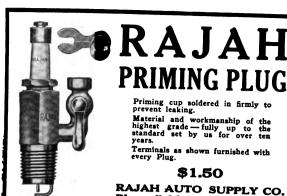
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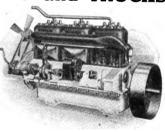
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CHAMPION SPARK PLUG CO.

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#### MOTOR WORLD

"The Paper That Is Read, Not Merely Looked At"

It ought to be a regular weekly visitor in your office, Mr. Dealer. \$2.00 per year—a small price for a big value. Subscribe today.

Motor World Publishing Co., 1600 Broadway, New York

# AMERICAN KUSHION KORE

A tire filler 10 to 20 per cent. lighter than any other tire filler. A big proposition for dealers who are on the alert for more and better business. Write for details.

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For anything in sheet metal that goes onto an automobile ask the

# HAYES MANUFACTURING COMPANY

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Largest Users of Sheet Metal in the World

# Schafer Ball Bearings

Famous For Their Durability

BARTHEL & DALY, 42 Broadway, New York



UNITED STATES TIRES

ARE GOOD TIRES

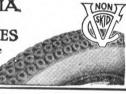
# PERFECTION SPRING COMPANY Specialists Spring Suspension High Grade only

CLEVELAND, OHIO



Pennsylvania Rubber Company

Jeannette, Penn.



#### METZ "22" ROADSTER \$475

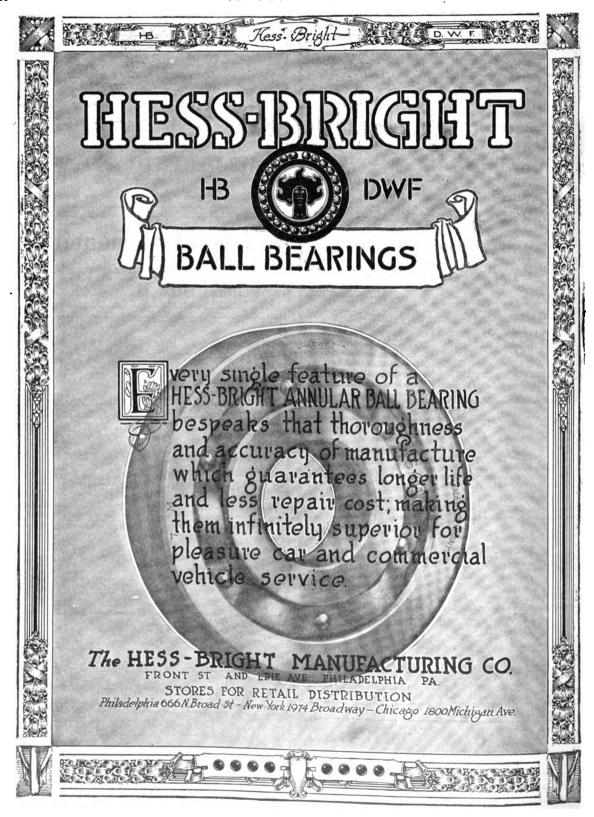
The "gearless car"—no clutch to slip, no gears to strip—completely equipped, fully guaranteed. 4-cylinder, 22½ H.P. water-cooled motor. Bosch magneto, artillery wheels, best quality clincher tires. Makes 5 to 50 miles per hour, 28 to 32 miles on 1 gallon of gasoline. Great hill climber. You can secure EXCLUSIVE SALE in your territory. Write for Book "B."

METZ COMPANY, Waltham, Mass., U. S. A.

#### HESS AXLES

Now standard on fourteen makes of America's leading cars and still growing. Send for blue-prints and specifications—or consult our engineering department.

HESS SPRING AND AXLE COMPANY CARTHAGE, OHIO

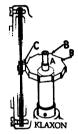


### To Klaxon Dealers

# get these facts

# firmly fixed in your mind

THE KLAXON is not an "electric horn." It is distinctly different—both in principle of operation and in the character of its note.



The Klaxon is a MACHINE.

It is built to produce big, clean-cut sound waves of great carrying power. These waves are made separately—each by a single big body swing of a steel diaphragm.

The swings are caused by the revolutions of a high speed wheel "A"

with specially designed cum faces "B-B." Each time one of these faces pushes the button "C" on the diaphragm it causes the diaphragm to swing forward and back.

The vibrations thus caused are continuous without skip or miss — 25,000 to the minute.

The revolving wheel is driven by an electric motor; or, in the case of the Hand Klaxon, by a high speed multiplying gear.

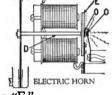
The wear on the parts is too small to measure.

The cam wheel is made of glass-hard steel as is the diaphragm button with which it comes in contact.

This stability of mechanism makes possible the Klaxon guarantee of permanently satisfactory service.

The note of the "electric horn" is made by a leaf spring "buzzer"— the same as that used for door-bells, pantries and offices.

The rod "D" attached to the diaphragm is tapped or snapped against by the leaf spring "E."



This merely jars the diaphragm without swinging it or keeping it swinging. Hence there is no big heavy sound wave and no carrying power.

Each tap of the rod means a hot electric spark between the two points "O-O."

Unless these points are made of platinum iridium—the cost of which is prohibitive—they quickly burn out and the buzzer is useless.

The Klaxon machine-made note is loud. It is sharp and clean-cut—totally unlike the nasal buzz of the "electric horn."



Lovell-McConnell Mfg Company Newark, N.J., U.S.A.

KLAXON

"The Public Safety Signal"



This advertisement planned, written and set up entirely in the Klazon Fectory. Type composition by the Klazon Press with "Klazon" type especially designed by Goudy.

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Two cars and a name that place the Studebaker dealer in a position of utmost advantage.

In the Studebaker FOUR at \$1050, including complete electrical equipment, he offers the buyer a car that answers every purpose—passenger capacity, size, power, convenience, all-around efficiency—that a "Four" can be expected to serve.

In the Studebaker SIX he offers the lowest priced SIX in the world—the price of \$1575 being made possible only by the hugeness of Studebaker production and sales.

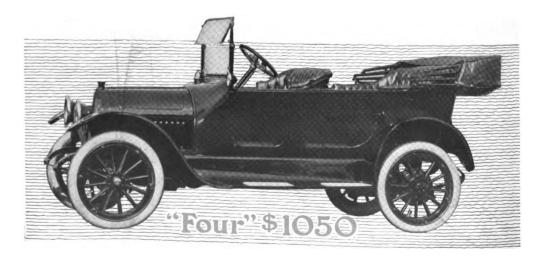
The name typifies 60 years of the highest ideals and integrity in vehicle manufacturing; and an organization whose one thought and effort is to maintain it.

#### STUDEBAKER Detroit

 FOUR Touring Car
 \$1050
 SIX Touring Car
 \$1575

 FOUR Landau Roadster
 \$1200
 SIX Landau Roadster
 \$1950

 SIX SEDAN
 \$2250



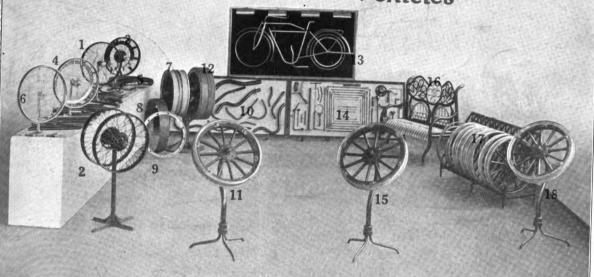
Trade Paper Giving the World's Motor Vol. XXXVIII

No. 4

New York, January 15, 1914

Ten cents a copy Two dollars a year

# Pioneers and World's Largest Producers of Rims for Motor-Driven Vehicles



# Stanweld Products at the Automobile Shows

- Cyclecar Front Wire Wheel.
- Pront and Rear Wire Wheels 2 for Ford Cars.
- Cyclecar Rear Wire Wheel assembled with Special V-Belt
- Motorcycie Rear Wheel with V-4 Belt Pulley-Rim made integral.
- Miscellaneous Tubular Parts fo. Bicycles, Motorcycles, Cycle-cars, Automobiles and Motor Trucks.
- 6 Motorcycle Front Wheel.
- Dual Demountable Motor-Truck 7 Rim for Pneumatic Tires—Rim-Base same as used on Stanweld Number Sixty Rim.
- A Tire-Base for Motor-Truck Solid

- 9 Side-Flange for Motor-Truck Solid Tire Demountable Rims.
- Samples of Exhaust Tubes—we manufacture more Exhaust Tubes than any other compan, in the world.
- Stanweld Universal Quick-Detachable Demountable Rim, Number Forty.
- 12 Dual-Demountable Motor-Truck Rim for Solid Tires—self-centering Bases.
- 13 Motorcycle Frame Parts made of Stanweld Steel Tubing— ninety per cent. of all American-made Bicycles and Motorcycles have frames made of Stanweld Steel Tubing.
- Samples of Intricate Electric Welding Work—We have developed this wonderful process far beyond its efficiency in the hands of any other organization.

  In the center of this board are samples of connecting-rods, etc. For these, we make our own drop-forgings.
- Stanweld Detachable Demountable Rim, Number Twenty-one.
  - Show-Piece (Settee) built en-tirely of standard parts made of Stanweld Steel Tubing—Assem-bled by making more than five hundred welds, using every welding process known.
- CLEVELAND

  Plain Clincher, Detachable, and Demountable Automobile Rims —also Bicycle, Motorcycle, Cyclecar, Automobile and Aeroplane Rims.
  - Stanweld Detachable Demount-able Rim, Number Sixty.

# The Standard Welding Company

Pioneers and World's Largest Producers of Rims for Motor-Driven Vehicles

Main Office and Factory

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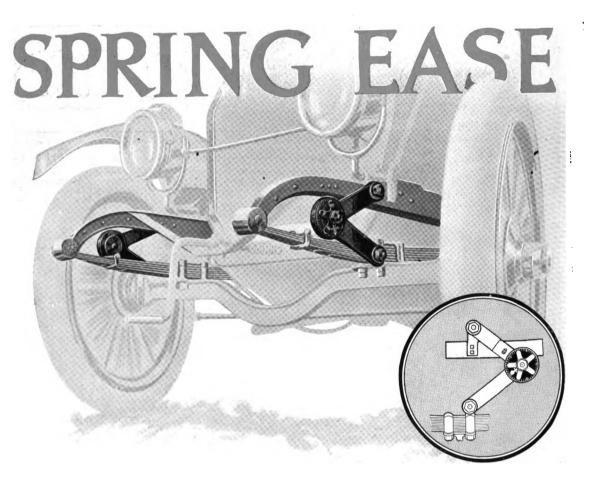
DETROIT Ford Bldg.

U. S. Express Bldg.

Distributors in Principal Cities of the United States

Published Weekly by the Motor World Publishing Company, 1600 Broadway, New York

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# Truffault-Hartford **ABSORBER** SHOCK

"The Pioneer and the Best"

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Truffault-Hartford Shock Absorbers are indispen-

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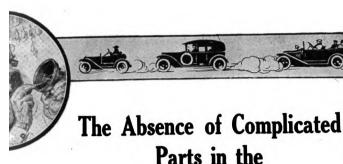
R. I. V. Company S. W. Cor. 57th St. and Broadway

by.

W. Cor. 57th St. and Broadway NEW YORK

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**IMPORTED SINCE 1904** 



# ORBIN-BROWN SPEEDOMETER

"The Speedometer of Absolute Accuracy"

is an assurance of both durability and accuracy.

The few parts that constitute the Corbin-Brown Mechanism are large and strong—built to withstand wear—so constructed as to minimize friction.

The Corbin-Brown is unerringly accurate, because its principle is centrifugal.

This principle is employed in the construction of mechanisms in which accuracy is a first requirement. It has been scientifically proven that in order to gain accurate registration of speed and mileage at all times and under all conditions of heat and cold and climatic variations the centrifugal principle is essential.

The Corbin-Brown Speedometer possesses numerous other features of practical value. Before selecting your speedometer equipment investigate the Corbin-Brown.

'New 1914 Catalog Furnished on request

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THE AMERICAN HARDWARE CORPORATION, Successore

New Britain, Conn.

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See It At Chicago!

# SHARRER ONE HAND TOP

#### Was a Feature of the New York Show

Before the show it was generally conceded by the leading automobile engineers and top builders that the SHARRER TOP was the best in its class. Popular opinion will be the same at Chicago.

The fact that one well known Automobile Company exhibited a one man top on their best model the opening day at New York and changed the "one man top" to a SHARRER One Hand Top on the second day of the show is the best evidence of the superiority of the SHARRER TOP.

Modern equipment demands the SHAR-RER. Manufacturers should inquire into our proposition. The SHARRER is fully covered by patents and we guarantee to protect you.

We Will Be At Space No. 39--Coliseum

#### Sharrer Patent Top Co., Inc. 245 West 55th St., New York City

Telephone, 6590 Columbus



# gerland, \$950

Completely Equipped With electric starter and generator - \$1075 Prices f. o. b. Toledo

Specifications

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Three-quarter float-A ree-quarter Hoat-ing rear axle
Timken and Hyatt
bearings
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Stewart speedometer
Electric horn
Flush U doors with
concealed hinges

THE Overland mail bags are the best indications of Overland popularity.

Here is an ordinary Overland day's mail:

First class, 2100 pieces; third class, 15399 pieces; fourth class (parcel post), 2473 pieces. Total: approximately 20,000 pieces. Approximate weight: one ton.

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Manufacturers of the famous Overland Delivery Wagons, Garford and Willys-Utility Trucks. Full information on request.

## FORD TO BUILD THAT LONG LOOKED FOR ELECTRIC CAR

Plans Well Laid for Popular-Priced Vehicle Selling for About \$600— Will Employ Special 100-Mile Edison Battery.

Notwithstanding reports to that effect, the Ford Motor Co., of Detroit, does not purpose producing electric vehicles. However, while many men, some of them manufacturers of electric vehicles, have discussed the desirability of an electric car at a popular price, Henry Ford, as an individual, has been actively preparing to produce one. He himself confirmed the report late last week. It had been current for several days, always associated with the Ford Motor Co., but inquiry at that fountainhead brought the technically correct reply, "Absolutely no truth in report that Ford Motor Co. will build electrics," and thus partially disarmed suspicions.

Meanwhile Henry Ford personally was in consultation with none other than Thomas A. Edison, at the latters' laboratory in East Orange, N. J., and when the fact became known he admitted his intention to enter the electric vehicle field with a popular priced car-one selling for about \$600. At the same time, he made known that Edison, for a year or more, has been developing a battery especially for the purposes of the Ford electric and has succeeded so well that a 400-pound battery, capable of operating 100 miles without recharging, is assured. It will permit the construction of a car weighing approximately 1,100 pounds.

The car will be built in either Detroit or Dearborn, Mich., but it is not expected that anything beyond the work of perfecting it will be done for a year at least. When it is ready for the market it will be produced by a company other than the Ford Motor Co., which, however, will be dominated by Henry Ford

and managed by his 21-year-old son, Edsall.

Meanwhile, as has been known for more than a year, Ford is developing a one-man gasolene plow, with which he will next startle the universe, in all human probability.

#### Yuster Forms Axle Company in Ohio.

M. L. Yuster, former general manager of the Hess Spring & Axle Co., and several other men of equal prominence in the automobile industry, have organized the Yuster Axle Co., in Cleveland, O., for the manufacture of axles for both cars and trucks. They already have acquired the former Royal Tourist car plant in Cleveland, which is uncommonly well adapted for their purposes, and the necessary equipment having been installed operations have commenced.

W. R. Hopkins, of the Cleveland Short Line Railway Co. and the Cleveland Underground Rapid Transit Co., is president of the Yuster company; E. H. Parkhurst, former vice-president of the Peerless Motor Car Co., is vice-president; E. W. Farr, treasurer of the Perfection Spring Co., second vice-president; Ben F. Hopkins, of the Belt & Terminal Railway Co., treasurer, and M. L. Yuster, secretary and manager. E. E. Muller, is assistant general manager and purchasing director, while R. E. Fries, formerly with the Weston-Mott and Lozier Motor Car companies, will have charge of the engineering department.

#### Grand Rapids Man Buys Disco Assets.

At the receiver's sale of the Disco Co., in Detroit, yesterday, the property was bid in by C. H. Bender, of Grand Rapids, Mich., His offer of \$17,200 probably will be confirmed by the referee on Saturday, when it is Bender's immediate intention to organize a new company and continue the manufacture of Disco starters. It will be backed by a group of Grand Rapids business men. The assets acquired were inventoried at \$100,133.57 and were appraised at \$75,140.82.

## MICHIGAN BUGGY'S SIXTEEN MOST OBLIGING DEALERS

One of Them Signed Undated Notes for \$1,000,000—Receiver Bares More Figures Showing Extent of Rottenness.

Nearly everyone connected with the industry has at least a fairly good idea of the remarkable high financing which kept the Michigan Buggy Co., of Kalamazoo, afloat until the crash came on August 6th last; but it was not until this week when the receiver, the Detroit Trust Co., through its vice-president, Joseph Bower, issued a report to the creditors that the many ramifications were fully disclosed.

While it was aiready known that undated dealers' accommodation notes to a large amount had been made use of, Bower's investigation uncovered the fact that, apart from those which had been negotiated, the Michigan company had attempted to fortify its future with almost literally a base of such paper. He found signed but undated notes of the sort bearing the names of sixteen Michigan Buggy dealers and distributers, to the amount of more than \$2,462,000, of which Dewey & Co., who handled the Michigan car in the little town of Plano, Ill., furnished more than \$1,000,000 worth

It was believed that there were many other notes of this nature but they could not be found. None of them had been entered on the books, but nothing serves better to show now the Michigan officials proposed to keep their rotten ship afloat. When the company failed, its liabilities were placed at approximately \$3,000,000, to say nothing of the \$1,600,000 debts accumulated by Victor L. Palmer, its secretary-treasurer, who later was personally forced into bankruptcy. As originally reported, the company's assets were \$2,780,000, which the

first appraisal scaled down to the sum of \$1.260,000.

According to the receiver's report, while the Michigan Buggy Co.'s statement of January 31, 1913, which is used for the purpose of comparison, charged off five per cent, of what is termed balance of accounts receivable, the investigation indicates that it is more likely that from 60 to 70 per cent. of the entire debt balance should be charged off, in view of statements made by creditors concerning their indebtedness.

The January 31st statement shows that items carried as merchandise sales were also included in the inventory, but this is difficult to prove owing to the fact that many of the inventory books giving physical details have disappeared. It has been found that included in the assets were such items as interest charges, advertising expenditures, office expenses, etc., to the amount of \$144,000, the notorious "velvet" payroll, carried in the name of J. Roach & Co., appearing in the general accounts receivable though charged to advertising.

As one of the many other instances in which the books were juggled, it is pointed out that February sales were carried as accounts receivable for January, to the extent of \$521,900.

While the books showed a profit for the year, amounting to \$287,000 in round figures, the inflations of inventory and other errors are such that instead of a profit there was a net loss of \$74,000. The inventory inflations amount to \$510,-200, while accounts payable, omitted from the January 31st statement, amount to \$417,600, making it necessary to deduct from the assets reported by the Buggy company the sum of \$1,529,000, which deduction will be still further increased, says the receiver's report, when the correct depreciation on accounts receivable and other inflations is reached.

The full report of the Detroit Trust Co.'s audit covers 258 pages and, needless to say, it does not accompany the report submitted to the creditors this week. It is, however, available at the offices of the Trust company in Detroit and Kalamazoo. The report to the creditors is accompanied by a check for the first six per cent. dividend to all creditors whose claims have been approved.

The receiver does not expect to realize more than the guaranteed bid of \$225,000 from the auction sale of the personal property of the bankrupt company. A bid of \$40,000 has been received for the real estate, which the receiver has reported to the court, but without recommendation.

# SPARK PLUG ASSOCIATION

TO BE FORMED IN CHICAGO

Tentative Arrangements Made at New York Show to be Followed by Definite Action in the West —Name Already Chosen.

Preliminary steps already have been taken, as was told in Motor World last week, and the final organization and election of officers of the association of Canfield spark plug patent licensees will take place at the Chicago automobile show; the meeting for this purpose will be held January 29, at 2 o'clock in the afternoon in the Auditorium Annex.

The licensees already have decided that their body will be called the Association of Spark Plug Manufacturers and Attorney William A. Redding, who is counsel for A. R. Mosler, the owner of the Canfield patent, is drafting bylaws which will be acted upon at the Chicago meeting. The objects of the association, which are to permit an interchange of ideas, to bring about greater harmony in the spark plug trade, to correct existing abuses and to standardize manufacture and make possible a better and cheaper plug, will also be put into concrete form at that time.

The matter thus far is in the hands of the committee, which was named at the Mosler luncheon in New York during the show; its members are: D. B. Mills, Rajah Auto Supply Co.; Albert Champion, Champion Ignition Co.; R. A. Strohnnehan, Champion Spark Plug Co.; David Smith, Standard Co., and Otto Heins. Bosch Magneto Co.

Following its appointment, the committee made preliminary arrangements and reported its progress to the licensees last week Friday. The project is receiving enthusiastic support from the spark plug men.

#### Westinghouse Seeks a Kissel Plant.

Negotiations are under way whereby the Westinghouse Lamp Co.. of New York, probably will become possessed of the factory recently established in Milwaukee by the Kissel Motor Car Co. and which is admirably suited to the manufacture of globes for motor car and other lamps which the Westinghouse company has in view.

While admitting that the negotiations are pending, President Kissel states that their consummation depends entirely on other deals which are in contemplation and which, if terminated, will result in further extension of the Kissel business.

It is probable that the Westinghouse transaction will come to a head about the end of the present week.

The Kissel company, of course, still maintains its original plant in Hartford, Wis., and it is stated that if it relinquishes its Milwaukee factory to the Westinghouse agents it will build a still larger structure in that city.

#### Rolls-Royce Earns Handsome Profits.

During its fiscal year which ended October 31st, according to its report just made public, Rolls-Royce, Ltd., which is probably the most notable of the high grade manufacturers in Great Britain. earned a net profit of \$456,845, as compared with \$355,310 during the corresponding twelve months of the previous year. The directors recommended the payment of a dividend at the rate of 30 per cent. per annum on its capital stock of \$1,000,000. The Rolls-Royce reserve fund now stands at \$680,630. Among other things, the annual report brings out that the item of good-will, carried at \$200,000, is to be eliminated.

#### Pope Receiver Reports Cash Increase.

According to the report of Colonel George Pope, receiver for the Pope Mfg. Co., in Connecticut, the balance on hand on December 31st was \$106,091.67. as against \$85,404.32 November 29th last. During December, receipts from sales of the Hartford factory products amounted to \$35,889.62. Other receipts bring the total income for the month to \$55,987.38. The expenditure during the corresponding period amounted to \$35,300.03, the largest item being \$19,337.72 for factory payroll.

#### Oathout Becomes Silver's Partner.

Charles W. Oathout, at one time the Jackson agent in New York, has acquired an interest in the rights of the C. T. Silver Motor Co., the Overland agent, which recently took over the Peerless agency also and with it the palatial Peerless branch on upper Broadway. Oathout has been elected treasurer of the Silver company and will also serve as sales manager, which indicates that he will play an active part in the business.

American Starters for Renault Cars.

Although the Renault factory in France is not yet supplying electric starters as stock equipment, the Renault Selling Branch in New York has found the demand too formidable to resist. Accordingly, it has placed an order for Ward-Leonard electric equipment for all cars brought into this country.

#### MOTOR WORLD

## NORTH EAST HITS BACK AS STARTER WAR WARMS UP

Rochester Company Denies Infringement Charges of Maker of Delco System—Cites Patents Which it Claims Anticipate.

The North East Electric Co., of Rochester, N. Y., whose lighting and starting system was attacked as an alleged infringer in the courts in New York City last July by the Dayton Engineering Laboratories Co., the Delco maker, is preparing to combat the case when it comes up in court. This week it filed additional information in its answer to the Delco suit in which it specifies a number of patents which it maintains establish priority to the Delco patents.

The Delco patents are Nos. 745,157, granted November 24, 1903, and 842,827, granted January 29, 1907; they were issued to Clyde J. Coleman and turned over to Conrad Hubert, who assigned them to the Delco company. The Dayton Engineering Laboratories Co. is, of course, the complainant, but the nominal defendant is the Sidney B. Bowman Automobile Co., of New York City, which, it is charged, sold a Marmon car equipped with a North East system.

The North East company appears to place considerable reliance on British patents issued to Frederick William Lanchester and covering one an Improved Starting Arrangement and one an Improved Ignition Arrangement, for motor cars. They are Nos. 12,245, granted in 1899, and 20,570, granted the same year. These two state specifically that they cover ignition and starting apparatus, while some of the others which are cited as including all or part of the Delco invention claim to cover motor vehicles and are described otherwise than in the starter classification.

Some of the others are: No. 11,058, British, granted in 1896 to Ernst John Clubbe and Alfred William Southey; No. 26,302, British, granted in 1896 to Francis William Greengrass; the following United States grants: No. 475,702, May 24, 1892, to W. H. Patton; No. 550,008, November 19, 1895, to G. A. Washburn; No. 581,816, May 4, 1897, to R. J. Gibbons and M. A. Wilcox, and No. 5997,921, January 25, 1898, to Edward Strong.

# Ohio is Finally Declared a Bankrupt.

After having once dismissed the bankruptcy proceedings brought against the Ohio Motor Car Co. of Cincinnati by the Eisemann Magneto Co., Judge Hollister, in the United States District Court in Cincinnati, has declared the company a bankrupt; after dismissing the proceedings December 18 he consented to reopen the case and this later action is the result. The Ohio company, however, has announced its intention of appealing.

The Ohios' troubles began about a year ago when receivership action was instituted in the State courts; the assets were sold for about \$40,000, the buyer assuming a mortgage of \$25,000. The Eisemann company and others did not relish the receivership in equity because, so they claimed, it would not permit them to take as much of a hand in affairs as they desired, hence the petition in bankruptcy.

#### Receiver with "White Elephants."

Although the receiver, the Detroit Trust Co., has made every effort to dispose of the property of the Flanders Mfg. Co., three of the five special parcels into which the Pontiac plant was divided, remain unsold, and two of the three parcels of the Chelsea factory, like white elephants, also remain on its hands. Wide advertising in the newspapers of the principal cities, and several thousand circular letters have failed to attract a single buyer, and what will be done with the property not even the receiver can tell. Two dividends, equal to 40 per cent., have been paid, which, however, is far short of the 100 per cent. predicted at the time-December, 1912the Flanders enterprise went to smash.

#### Mason's Superintendent Wants \$27,800.

Although the Mason Motor Co., of Waterloo, Ia., failed in October last. Charles M. Holer, its former superintendent, has filed suit against it for \$27,-824. In his complaint, Holer sets forth that he relinquished a position in Indianapolis to become the Mason superintendent in return for a salary of \$3,-600 per year and 500 shares of Mason stock, valued at approximately \$25,000. When the company failed, Holer was notified that his services were no longer required and, accordingly, he sued for \$2,-824 salary due to April 1st last, and for the value of the 500 shares of stock which were never delivered to him.

#### Tiffany Electrics Direct to Users.

Although not having wholly eliminated the dealer, the Tiffany Electric Car Co., of Pontiac, Mich., of which E. LeRoy Pelletier is the head, is now selling most of its product direct to the user. In all such cases, the purchaser is given the agent's discount.

## NEW YORK SHOW AGAIN PROVES REAL TRADE TONIC

Dissipates "Blues" and Good Cheer Proves Contagious—Big Orders for Small Cars—Col. Pope's Birthday Remembered.

Oft predicted, that day when there shall be but one National show, or none at all, now seems further than ever removed. The surprising public interest and the tonic effect of the New York show which closed in Grand Central Palace last Saturday night are responsible for this state of affairs.

As usual, the actual orders that grew out of it were placed in alternate fat and lean streaks, but the stimulating effects of the exhibition, however, were so generally felt that skepticism was quite effectually routed.

To term the show a trade cocktail is probably the best definition that can be applied to it. As Motor World stated last week, before the doors closed, pessimism had been stilled and the scandalmonger squelched, and as the week wore on the good cheer spread almost to the uttermost corners.

The abandonment of Madison Square Garden, after so many years of use, has raised a doubt in the minds of even the stout-hearted, but it is not too much to say that the Garden was wholly forgotten before the week was half over. All fears that the attendance would be affected proved vain for, while actual figures are not available, it is known that the attendance at the Palace alone exceeded, by at least 20 per cent, the combined attendance at the Garden and Palace last year, and this without regard to the trade tickets, which were sold in bulk and the count of which is still in progress.

Undoubtedly the best actual business transacted was booked by the manufacturers of the Briscoe and Saxon light cars. In each case, more than 4,000 cars were contracted for; indeed, their makers might easily have disposed of their entire outputs had they not deemed it good policy to hold something in store for the Chicago show, which opens Saturday, 24th inst.

The several cyclecar manufacturers who also displayed their wares—in at least two instances their entire output was on show—likewise had no complaint to make regarding the number or size of the plums which fell into their laps. While the future of these little hybrid vehicles is shrouded in grave doubt, there

is no question but that for a year or perhaps two they are due for no small measure of popularity, and such orders as were secured at the show by some of the cyclecar makers should enable them to acquire real factories and actually begin production.

Of the many pleasant occurrences which marked show week, none was more agreeable than the quiet remembrance of the 70th birthday of Col. Geo. Pope, chairman of the Automobile Chamber of Commerce's show committee, on the 9th inst. Due to death in his immediate family, the "good 'grey Colonel" did not move about the Palace as much as usual, but on Friday he was brought into the building and when near the head of the grand stairway on the main floor was invited to witness a new exhibit which had been put into place. All unknowing, Colonel Pope was led to the "exhibit"—a tall grandfather's clock, on the plate glass of which was the inscription. "To Colonel George Pope, From a Thousand Friends." The Colonel was so deeply touched that words failed him.

#### Chicago Firm Fathers Cyclecar Show.

Like many other people who have taken a slant at the cyclecar, Erwin Greer & Co., who conduct an automobile business in the Wilson building in Chicago, have seen the opportunity and embraced it.

The Wilson building adjoins the Chicago Coliseum and last year contained a part of the overflow of the national automobile show. Meanwhile. Greer & Co. leased it for their business, but during the week January 24th to 31st, when the automobile show in the Coliseum is in progress, they will sacrifice their immediate interests and permit cyclecar manufacturers, and even real automobile manufacturers, to hold an exhibition within their salesroom. They are selling space for as low as \$50, and as quite a few spaces can be laid out in the Wilson building. Greer's income from that source and from admission fees, is likely to handsomely repay the "sacrifice."

Greer & Co. call their project a "cyclecar show" and they say-just like that!that the public wants 350,000 cyclecars for 1914.

#### Indian Oil Sues an Auburn Man.

The Indian Refining Co. of New York filed suit last week in the Supreme Court for New York county against G. A. Paddock, of Auburn, N. Y. It is charged that he incurred an indebtedness of \$99.35 between May 21 and June 26 and paid but \$2, leaving a balance of \$97.35.

### **NINE ACCESSORY MAKERS** FORM TRADE ASSOCIATION

Nucleus of What is Hoped Will Become Large Organization Has Birth During New York Show -Organizers and Objects.

Representatives of nine of the specialties exhibited at the New York automobile show formed the nucleus of what they hope may include the bulk of the specialty and accessory manufacturing trade when they met Saturday evening last and organized the Accessories' Cooperative Association; it is made up thus far of the organizers, most of whom are comparative newcomers to the trade, but any reputable manufacturer, it is stated, will be admitted.

The organization is designed to promulgate plans for the betterment of trade conditions, to bring the members together, to correct abuses, to permit an interchange of ideas and to do all those things which generally are included in this category.

The officers and directors-who were the organizers-are: President, Lewis H. Schalock, M. & S. Gear Co., Kansas City, Mo.; secretary, N. L. Shaten, Standard Motor Parts Mfg. Co., 1200 Chestnut street, Philadelphia, Pa.; directors-John F. Renfro, Peteler Shock Absorber Co., New York City; William C. Reynolds, supply dealer and also of the Para Tire Co. of New York; Perry M. Powers. Powers Shock Absorber Co., New York City; C. J. Cadwell, Master Carburetter Co., Los Angeles; A. E. Roberts, S. & A. Mfg. Co., Boston; A. S. Noonan, A. S. Noonan Tool & Machine Works, Rome, N. Y.; J. W. Beers, Bridgeport, Conn.

#### Bankrupt Sues Pennsylvania Rubber.

The trustees in bankruptcy of the New York Commercial Co., a crude rubber importer, are still trying to realize all that is possible on the contracts which the company claims to have had in hand at the time it struck shallow water nearly a year ago; several suits have been filed against tire concerns and this week one was instituted in the Supreme Court for New York county against the Pennsylvania Rubber Co., of Jeannette, Pa.

It is charged that the Pennsylvania company made several different contracts for crude rubber-Upper Amazon Caucho Ball, Upriver Fine Para and First Latex Eastern Plantations Crepein December, 1912, and that following the bankruptcy the trustees, who are John Z. Lowe, Jr., William A. De Long

and Joseph W. Harriman, tendered the rubber and that the company did not take it. It was then sold in the open market and the company is being sued for the difference between the sale price and the contract price.

The contracts are said to have called for 63.519 pounds of rubber and the total amount asked is \$18,821.60, with interest.

#### S. & M. Car Becomes the Benham.

As a result of the bankruptcy of the S. & M. Motor Car Co., of Detroit, which failed last week, the Benham Mfg. Co., a creditor and owner of the factory in which the S. & M. car was built, has stepped in and will take up the work where the S. & M. company left off; the Benham company, however, does not take over the S. & M. company, but is merely planning to continue the production of the car, the name henceforth being Benham.

The S. & M. business, which was started last fall by E. E. Strobel and W. C. Martin, is said to have met financial disaster when its source of money supply was cut off; the car was an assembled "six" selling at \$2,485 and will be continued at the same price but with minor refinements. It is planned to proceed conservatively and to produce from 300 to 500 Benham cars during the coming season. The Benham Mfg. Co. is a parts maker, producing Ford steering wheels and windshields as well as other parts for other car builders.

Following the change, the Dimond-Warren Co., of New York City, which originally handled the S. & M. in the metropolitan district only, has been made eastern distributer of the Benham product.

#### White and Expressman Have Difference.

Joseph Brinkworth, who operates an express service in New York City, is the defendant in a suit filed this week in the Supreme Court for New York county by the White Co., of Cleveland. It is charged that between December 1. 1910, and July 1, 1912, he was supplied with goods and labor to the extent of \$3,146.84, on which he was paid \$850. The balance, \$2,296.84, is the amount demanded.

#### "Education" to Assist Seattle Show.

To assist the Seattle (Wash.) automobile show, which occurs February 9th to 14th, the promoters are exploiting what is termed a "National Educational Automobile Convention." The education. apparently, is to be imparted by lectures and demonstrations to be given in the afternoon and evening of each day.

# The V Veek's NORPORATIONS

Andover, Mass.—Milton Tire & Rubber Co., under Massachusetts laws; authorized capital, \$40,000. Corporators—P. L. Hardy and C. M. Riddock.

Dayton, O.—Meter Valve Carburetter Co., under Ohio laws; authorized capital, \$20,000. Corporators—George W. John, Horace R. Marquis and John C. Collett.

Sioux City, Ia.—Morgan Auto Co., under Iowa laws; authorized capital, \$50,000; to conduct a general motor vehicle business. Corporators—J. T. Morgan and others.

Boston, Mass.—Milton Tire & Rubber Co., under Massachusetts laws; authorized capital, \$40,000. Corporators—Philip L. Hardy, Herbert E. Pender and Chas. M. Riddock.

Cleveland, O.—Mono Truck Delivery, under Ohio laws; authorized capital, \$10,000. Corporators—W. C. Rhodes, E. M. Golding, V. M. Harris, A. C. Waid and L. L. Carpenter.

Campbell, Mo.—Campbell Garage Co., under Missouri laws; authorized capital, \$4,000; to operate a garage. Corporators—W. D. Beasley, J. A. Tweedle and Charles Wilson.

Boston, Mass.—Vendome Taxicab Co., under Massachusetts laws; authorized capital, \$5,000. Corporators—Albert Rosenfeld, Max J. May, David Litvin, and Charles Rosnosky.

Milwaukee, Wis.—Stanley Steamer Co., under Wisconsin laws; authorized capital, \$15,000; to deal in automobiles. Corporators—F. S. Durham, W. W. Burgett and J. C. Coxe.

Dayton, O. — Stoddard-Dayton-Maxwell Repair Co., under Ohio laws; authorized capital, \$10,000. Corporators—Benneville A. Rhodes, William S. Glasby and R. E. Gerspacher.

Indianapolis, Ind.—Ten Broeck Tyre Sales Co., under Michigan laws; authorized capital, \$5,000; to engage in tire repair. Corporators—R. T. Durrett, H. L. Lewman and H. P. Lewman.

South Charleston, O.—Sullivan Auto Co., under Ohio laws; authorized capital, \$5,000; to conduct a general motor vehicle business. Corporators—F. J. Sullivan, F. B. Houston and C. Hornick.

Wilmington, Del.—International Automobile Owners' Protective Association,

under Delaware laws; authorized capital, \$500,000. Corporators—Oscar J. Reichard, of Wilmington, and others.

Detroit, Mich.—Signal Motor Truck Co., under Michigan laws; authorized capital, \$60,000; to manufacture motor trucks. Corporators—A. C. Burch, John Squires and R. Murray Wendell.

Chicago, Ill.—Shaw Motor Co., under Delaware laws; authorized capital, \$1,000,000; to manufacture and deal in motors of all kinds. Corporators—J. W. Shaw, A. Fasking and A. Meyer.

Detroit, Mich.—Stafford Radiator Co., under Michigan laws; authorized capital, \$2,000. Corporators—John Irwin, Martin T. Millard, Earnest A. Snell, C. E. Stafford, F. D. Senger and Ralph P. Pinkham.

Attica, Ind.—Thornton's Garage & Livery Co., under Indiana laws; authorized capital, \$1,000; to operate a garage and livery. Corporators—D. R. Thornton, L. C. Thornton and Marshall Holmes.

Kalamazoo, Mich.—U. S. Auto Parts Co., under Michigan laws; authorized capital, \$1,000; to manufacture automobile accessories. Corporators—William O. Harlow, Orrin Hayes and Chandler G. Bullard.

Wilmington, Del. — Huxley Bronze Casting Co., under Delaware laws; authorized capital, \$50,000; to acquire patents and develop same. Corporators—N. S. Huxley, J. W. Huxley, Jr., and M. P. Huxley.

Youngstown, O.—Mahoning Buick Co., under Ohio laws; authorized capital, \$10,-000; to deal in motor cars. Corporators—J. V. Murphy, M. N. Coombs, Harriet T. Coombs, Leo J. Collins and Angelyn Collier.

New York, N. Y.—Motor Car Spring Co., under New York laws; authorized capital, \$75,000. Corporators—Stephen Otter, 871 Fox street; Benjamin Frankel, 928 Tiffany street; Joseph Prosky, 243 W. 17th street.

Columbia, S. C.—Gibbes Machinery Co., under South Carolina laws; authorized capital, \$300,000; to conduct a general automobile and machinery business. Corporators—A. M. Gibbes, F. H. Gibbes and C. J. Cato.

Ft. Wayne, Ind.—H. G. Raymond & Co., under Indiana laws; authorized capital, \$20,000; to conduct a general motor vehicle business. Corporators—Howard G. Raymond, Chester G. Schiefer and Wm. W. Bogart.

New York, N. Y.—Washington Auto Parts Co., under New York laws; authorized capital, \$1,500. Corporators—Joseph Dunn, 2247 Webster avenue; Max Rosansky, 4072 Third avenue; Adolph Sachnoff, 492 East 174th street.

Wilmington, Del. — Gasoline Supply Co., under Delaware laws; authorized capital, \$150,000; to buy, sell and handle gasolene, kerosene and other petroleum products. Corporators—H. E. Latter, W. J. Maloney and O. J. Reichard.

l'ortland, Me.—American Electric Car Co., under Maine laws; authorized capital, \$1,500,000; to manufacture and deal in electrical and mechanical devices of all kinds and automobiles. Corporators —A. F. Jones and T. L. Crotean.

Chicago, Ill.—Automobile Fender Equipment Co., under Illinois laws; authorized capital, \$25,000; to manufacture automobile fenders and accessories. Corporators—Clarence M. Baldwin, Francis M. Suttle and Frank H. Towner.

New York, N. Y.—Diagonal Garage under New York laws; authorized capital, \$1,000. Corporators—Jacob Schneider and Mary W. Schneider, both of 363 Van Dan street, Long Island City; Robert Burton, 394 East 54th street.

Dover, Del.—John C. Funk Air Spring Co., under Delaware laws; authorized capital, \$100,000; to manufacture and sell a patented air spring shock absorber for automobiles. Corporators—R. Clough, W. I. N. Loffland and W. P. F. Loffland.

New York, N. Y.—North Moore Garage, under New York laws; authorized capital, \$2,500; to operate a garage. Corporators—Max Schlesinger, 1964 Seventh avenue; Allen Fox, 67 St. Nicholas avenue; Edward Fox, 1890 Seventh avenue.

Wilmington, Del.—Empire Motors Co., under Delaware laws; authorized capital, \$100,000; to manufacture engines, automobiles, airships, etc. Corporators—F. V. Webster, Baltimore, Md.; G. G. Schroeder, Washington, D. C.; G. G. Guyer, Wilmington.

# EXPRESS RATES TUMBLE AT THE ORDER OF UNCLE SAM

Greatly Reduced Schedules to Become Effective February 1—Cuts in Some Instances One-half
—Comparisons of Rates.

In conformity with a recent order of the Interstate Commerce Commission, express rates throughout the country are to undergo a radical reduction February 1. The cuts range from 10 to 50 per cent. and the reductions apply to points from coast to coast.

The nearest approach to a 50 per cent. cut is in the rate on five pounds between New York and St. Louis; formerly it was 65 cents and now it is 32 cents. Transportation includes free insurance up to a valuation of \$50 and the express companies are advertising the advantages of using the express service, into the profits of which the Parcel Post has cut a no inconsiderable hole.

Some of the comparative rates follow: New York and Chicago—5 pounds; old, 60 cents, new, 31 cents. Ten pounds; 75 cents, 42 cents. Twenty pounds; \$1, 64 cents.

New York and St. Louis—5 pounds; 65 cents, 32 cents. Ten pounds; 80 cents, 44 cents. Twenty pounds; \$1.10, 68 cents.

New York and Denver-5 pounds; 80 cents, 47 cents. Ten pounds; \$1.25, 75 cents. Twenty pounds; \$2, \$1.30.

New York and Butte, Mont.—5 pounds; 80 cents. 58 cents. Ten pounds, \$1.40, 96 cents. Twenty pounds; \$2.50, \$1.72.

New York and Dallas—5 pounds; 75 cents, 45 cents. Ten pounds; \$1.15, 70 cents. Twenty pounds; \$1.65, \$1.20.

New York and San Francisco—5 pound; 80 cents, 71 cents. Ten pounds; \$1.50, \$1.22. Twenty pounds; \$2.85, \$2.24.

#### Changes Among Prominent Tradesmen.

Ralph Ketchum, previously connected with the R. & L. Co. in Boston, has been appointed manager of the New England Kissel Kar branch in that city. He succeeds H. B. Pruden.

- L. E. McKenzie, for many years with the Studebaker Corporation, has been appointed a district sales manager for the Haynes Automobile Co. He will make his headquarters in New York.
- H. A. Oswald, former superintendent of painting and trimming of the Hudson Motor Car Co., of Detroit, has connected with the Sherwin-Williams (paint) Co.,

of Cleveland. He is attached to the sales department as a special representative.

Joseph R. Power, who for three years has been in charge of the wholesale business of the Anderson Electric Car Co. in Illinois, has been made district manager of the Chicago Electric Motor Car Co. His territory will include Illinois, Indiana and Wisconsin.

H. A. Leinhard, assistant secretary of the Pope Mfg. Co., of Hartford, has resigned that post after having served the Pope interests for some 20 years. During most of that period he had charge of its export department, but latterly has been acting as advertising manager.

Walter S. Tullis having been promoted to the post of direct factory representative of the Continental Rubber Works, with headquarters at the plant in Erie, Pa., B. W. Snowman has been appointed manager of the Continental branch in New York City. Previously he was connected with the Diamond Rubber Co.

Leighton Dunning has been appointed chief of the laboratory and testing plant of the American Bronze Co., which produces Non-Gran bearing bronze in Berwyn, Pa. Previously Dunning was attached to the engineering department of the General Electric Co., in Schenectady, N. Y.

#### Eisemann Increases Service Stations.

The Eisemann Magneto Co., of Brooklyn, N. Y., has added to its list of service stations the following: Philadelphia Magneto Repair Co., Philadelphia, Pa.; H. G. Zimmerman, Harrisburg, Pa.; P. Melchiors Machine Works, Omaha, Neb.; Archer-Wiggins Co., Portland, Ore.; Storage Battery Service Co., Seattle, Wash.; Bissingers Magneto Exchange, Cleveland, O.; McCarthy Bros. & Ford, Buffalo, N. Y.; Auto Supply Co., Memphis, Tenn., and Charles Rubel & Co., Washington, D. C.

#### Heinze Opens Branch in New York.

The Heinze Electric Co., of Lowell, Mass., has opened a New York branch and service station at 1876 Broadway. It is in charge of P. G. Sedley. In addition to carrying a full line of Heinze electric apparatus, it will also stock carburetters and spark plugs.

#### Federal Truck Enters England.

Whiting, Ltd., of London, which heretofore has handled American cars in a large way, has taken on an American truck, the Federal. It is being sold abroad under the hyphenated style Whiting-Federal.

# BETTER CARS BUT NOT SO MANY TO ISLAND AMERICA

Average Price in October Greater by \$76—But Cars Are 29 Fewer— Philippines Only Gain— Tires Gain and Lose.

Despite the fact that the average price of cars bought by the non-contiguous American possessions during the month of October last was \$76 greater than it was in the same month of 1912, the quantity taken was considerably less; last October Hawaii, Porto Rico, the Philippines and Alaska paid \$1,305 for their cars and \$1,229 in October, 1912. The possessions, however, bought 29 fewer cars, the value decreasing by \$25,902.

The Philippines was the only possession to gain; it bought 27 more cars at an increased expenditure of \$36,708. The total value of parts shipped was greater by \$3,516. During the 10 months ending with October, 1913, the sales of cars to the island countries increased in number by 28 compared with this same period of the preceding twelvemonth. The value increased by \$33,214.

Figures as to tires are not given by the government statisticians for all the group of detached America but only for Hawaii and Porto Rico; in October, 1912, Hawaii bought \$35,706 worth of tires and \$21,500 in October of last year, a loss of \$14,206. Porto Rico paid \$15,452 for its tires in October, 1912, and \$34,898 in that month of 1913, a gain of \$19,446. The figures in detail follow:

		Octo	ber	
		912		Values.
	No.	Values.	No.	A Since
Hawaii—				£49,083
Cars	81	\$110,060	29	8,172
Parts*		8,377		8,172
Porto Rico				31,972
Cars	33	35,035	27	31,972
Parts*		8,598		5,792
Philippines		-,		83,474
Cars	42	46,766	69	
Parts*		1,237		7,776
Alaska—		-,		2,536
Cars	1	1,100	3	
Parts*		94		82
Total cars	157	\$192,967	128	\$167,065
Total parts*.		18,306		21,822
.our parts .		10,000		
Total cars				
and parts	157	\$211,267	128	\$188,887
				-
Ten Months Ending October				
	No.	Values.	No.	Values.
Hawaii—				\$861,005
Cars	504	\$792,421	496	76,435
Parts*		61,018	• • •	70,100
Porto Rico-		_		295,703
Cars	346	490,647	232	71,895
Parts*		99,150		/1,0/0
Philippines		-		687,300
Cars	412	533,111	550	57,586
Parts*		48,461		37,360
Alaska				24,549
Cars	14	19,164	26	3,176
Parts*		3,956		3,170
				24 040 557
Total cars	1.276	\$1,835,343	1,304	\$1,868,557
Total parts*		212,585		209,092
,				
Total cars and parts* *Does not incl	1.276	\$2,047,928		\$2,077,649

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# In SALESROOM and GARAGE



A corporation for the distribution of the Enger car in Kansas is being formed in Topeka by R. K. Wilson, now connected with the Kansas Motor Car Co., of 530 Quincy street; with him are associated in the new venture C. J. Bitkin and L. E. Montgomery, of Topeka, Kan., and J. T. Kingman, of Los Angeles. The capitalization will be \$10,000 and the garage business of the Kansas Motor Car Co., as well as the location, will be taken over by the new concern. The building, however, will be remodeled.

Frank L. Roberts has taken over the retail business of the Velie branch in Boston; he has located at Newbury and Hereford streets in a building formerly occupied by The White Co. The wholesale Velie business will be continued with headquarters in Cambridge; Roberts's territory extends over a radius of 15 miles. Roberts, who will continue a customs brokerage business he has conducted, is not new to the automobile trade, having had the American agency for two years.

The Orlando (Fla.) Auto & Supply Co., which has conducted a supply store, garage and salesrooms on South Orange avenue, has been taken over by I. W. Phillips & Sons, who will retain their garage and repair-shop on Pine street; the company will handle Cadillac and Overland cars. E. H. McNeil, W. M. Davis and J. W. Jackson, who owned the Orlando business, will retire from that line of trade.

Morley Bros., who operate a wholesale hardware, saddlery and sporting goods store in Saginaw, Mich., have entered the tire field; they have secured the Goodyear representation and, besides selling tires and tubes, will maintain a service station. T. A. Saylor is manager of the sporting goods department, of which the tire department will be a part.

Carl Lehman has purchased the interest of his partner, J. U. Schmidt, in the Prairie du Sac (Wis.) Auto Co. and will continue the business under the same name; the company has the Ford distribution. Schmidt will continue as a Ford dealer, his territory being the towns of Spring Green, Franklin and Bear Creek, with headquarters at Plain.

Thomas E. Stuart, formerly an insurance man, has purchased the Illinois Gar-

age, in Bloomington, Ill. He has secured the Oakland agency and will handle this line exclusively. Schad & Schrolle, the former proprietors, will locate elsewhere, retaining the agencies for Buick and Apperson cars and Avery tractors.

J. Hileman and C. A. Garner, under the style Hileman & Garner, have opened a garage and salesrooms in Waterloo, Ia., at 405 5th street; they handle Haynes cars. Garner formerly was a service man for the Haynes Automobile Co., of Kokomo, Ind.

C. H. Crain has secured an interest in the Redlands Machine & Auto Co., in Redlands, Cal., of which A. R. Bowen formerly was sole owner; the name has been changed to Bowen & Crain Co. and the company will continue to distribute Cadillacs.

The Electric Vehicle Service Co., which was recently formed in Saginaw. Mich., has opened for business with an electric garage at South 2nd street and Germania avenue; it has facilities for charging 15 cars at one time, or 50 in

R. B. Fremont, former manager of the Krit branches in Oklahoma City, Tulsa and Little Rock, has taken over the business under the style Fremont Motor Car Co. Fremont is president and general manager of the company.

H. W. Conde, who established the Standard Garage in Ottawa, Ill., two years ago, has sold out to White & Parsons; Conde plans to reenter the trade near his old location with a supply store and tire service station.

The business of the R. W. Swearingen Co., of Jacksonville, Fla., has been turned over to a new company styled Swearingen Tire Co. It is located at 10 Duval street and handles Nassau and Portage tires.

M. Rothenberger, of Antigo, Wis., has leased a building at 5th avenue and Field street and will operate as a branch of the Marathon Motor Co., of Waupun, in the same State; he will handle Fords.

The Mutual Garage Co., of Norwood, O., is securing plans for a garage which it will build on the Montgomery pike, near the C., L. & N. Railroad; it will be 55 x 100 feet and of one story.

G. E. Blylock, of Baltimore, Md., has acquired full control of the Gauls-Blylock Co., of 1823 Maryland avenue; the company operates salesrooms, a garage and a tire repair business.

The Folkens & Siebrands Garage in George, Ia., has discontinued business; the proprietors will reenter the trade in Sioux Falls, S. D., under the style Siebrands-Folkens Auto Co.

E. D. Jones, of Lenox, Ia., has purchased the interest of Roy James in the Independent Garage in Creston, Ia. The other firm members are Toward Brown and Floyd Mahan.

Adolph Schick and E. J. Voltz, of Wheeling, W. Va., have broken ground for a garage and repair-shop; it will stand on North Huron street, near Vanc street.

L. D. Johnson, of Meadville, Pa., has purchased the Robert Garage on North street; he has changed the name to Universal Garage and will continue the busi-

M. G. Hastings, of Potsdam, N. Y., has purchased the garage of the Island Garage Co., on Maple street; he will add to the equipment and will continue the business.

T. J. Holdridge, Jr., of Wichita, Kan., has sold the Cadillac Sales Co. to I. E. Martin and A. L. Barton; the business is located at 236 South Lawrence street.

Benjamin Smith and Ernest Woodmen, of Fairfield, Me., are about to open a garage and repair-shop; they have secured a site and are erecting a building.

The garage of the Grafton (W. Va.) Motor Co. has been taken over by W. M. Cornwell & Co. The equipment will be enlarged and the business continued.

M. R. Raymond and P. S. Anglin, of San Antonio, Tex., have opened a repair-shop in connection with the Southern Motor Car Co.'s place of business.

E. S. Erdice, of Keota, Ia., has sold his repair-shop to Roscoe Niccum and Guy Hoover; Erdice will confine himself to the sale of Cadillac cars.

Louis A. Pacheco, of Oakland, Cal., has entered the trade under the style Louis Pacheco Auto Co. He will operate a repair-shop and garage.

Albert Barnabee, of Mendon, Wis.,

has sold his garage to Kline Bros., formerly of Leonidas, in the same State. They will operate it.

Alexander C. Sutherland, of Goshen, N. Y., has purchased the Valentine Garage; it will be used as a branch of the Van Dyck business.

M. P. Clough, of Lynn, Mass., is having plans prepared for a brick garage, which he will erect at 13 Newhall street; it will cost \$12,000.

Carl Burdeson, of Petaluma, Cal., has purchased the interest of his partner in the Independent Garage; Burdeson will operate it alone.

A. T. Whittle has taken over the Black Hawk Auto Co., located at 417 5th street west, Waterloo, Ia. William Mason was the owner.

H. F. Davis, formerly of St. Louis, has purchased the Overland Garage in Glendale, Cal. it is located at 1312 West Broadway.

H. J. Murch, of Worcester, Mass., Cadillac dealer, has opened a branch of his business in Fitchburg; F. E. Churchill is manager.

B. F. Kloppenstein has purchased the Ehresman & Rick Garage in Gidley, Ill. He will operate with Ivan Walker as an assistant.

A. B. Laile has taken over the Palace Garage in Camden, N. J., on Hadden avenue; accessories will be added to the business.

E. R. Allen has opened a garage and salesrooms in Huntington, Cal., on Pacific boulevard; he will handle Stude-bakers.

"Gus" Droll, who is well known as a horseman in Rankin, Ill., has "gone into" automobiles; he has secured the Ford agency.

The Jordan Auto Co., of Willimantic, Conn., has purchased the business of the E. P. Chesbro Co. It is located on Main street.

C. A. Powers, of Miami, Fla., is about to build a garage; he has leased three lots on East 11th street for the purpose.

Arthur Curtis has retired from the garage firm of Long & Curtis, of Sturgis, Mich. Long will continue the business.

A new garage has been opened on Broad street, in Columbus, Ga., by "Tut" McCane; he will feature repair work.

Thomas L. Rich has opened an accessory store in Los Angeles; it is located at 538 South Los Angeles street.

Frank de Rofsky has opened salesrooms in Chicago at 1319 Michigan avenue; he has the Halliday agency.

The F. P. Strip Garage, located on

Columbus avenue, Aurora, Ill., has been taken over by the Columbia Garage.

William Moore, of Oneonta, N. Y., has opened a garage on Windsor avenue; he also handles Hudson cars.

T. C. Martin, an implement dealer in Pullman, Wash., is erecting a garage; the site is on Grand street.

B. H. Brown & Sons, of Beaman, Ia., have opened a garage; it is located in the Blow building.

Timothy K. Hays has completed a new garage at Main and Locust streets in Bloomington, Ill.

George and Lewis Charlson, of Randall, Ia., are erecting a garage.

#### Minor Business Troubles.

The Wayne Auto Axle Co., of Fort Wayne, Ind., was placed in the hands of Bernard H. Schele as receiver last week by Judge A. B. Anderson, of the Federal court; the petition was filed by the Waverley Co., the Van Dorn & Dutton Co. and the Crucible Steel Co.

B. J. Lincoln has been appointed custodian of the property of the Miller Car Co., of Detroit, which manufactured in a small way; he was named by Referee in Bankruptcy Lee E. Joslyn upon the petition of creditors. The assets are listed at \$8,000, mostly real estate, and the liabilities at \$10,500.

Leonard T. Haight has been appointed receiver for the Jefferson Garage, Inc., of Syracuse, N. Y., to serve until the selection of a trustee; his bond has been placed at \$3,000 and he has been directed to insure the company's property, which was uninsured at the time the petition in bankruptcy was filed.

A petition in bankruptcy, with claims aggregating \$1,583, has been filed against the S. & M. Motor Car Co., of Detroit; the petitioners are: Griswold Body Co., Benham Mfg. Co. and the A. Harvey Sons Mfg. Co. The company entered the trade last September and planned to assemble and market a "six" selling at \$2,485.

The Aristos Co., of New York City, has filed its schedules in bankruptcy; they are: Liabilities, \$126,551; assets: \$34,000. consisting of stock, \$15,000; furniture and fixtures, \$1,000; two cars, \$1,500; machinery and equipment, \$1,500; patents, \$10,000; accounts, \$4,555; cash in bank, \$985; cash on hand, \$10. Among the creditors are: George H. Cottrell, \$92,603; J. H. Hunt, \$7,796, and John T. Pratt, \$3,078.

The Michigan Garage Co., of Muskegon, Mich., which was formed thout two years ago and bought up remaining parts

of the defunct Henry Motor Car Co.'s product with the intention of supplying them to owners of Henry cars, has dissolved; business is said not to have been all that had been expected. The notice of dissolution was signed by a majority of the directors, viz., John C. Nolan, I. LeRoy Doane, Abe Rozen and Harry Johnson.

#### Recent Losses by Fire.

Tell City, Ind.—Azro Castle; garage damaged. Loss, \$2,000.

Anita, Ia.—John Ruggles; garage destroyed. Loss not stated.

Montreal, Que.—Auto Garage Co.; plant destroyed. Loss, \$225,000.

Northville, Mich.—W. H. Pattermole; garage damaged. Loss, \$9,000.

Ogontz, Pa.—George Brecht, 118 Mill road; garage destroyed. Loss, \$2,500.

San Marcos, Tex.—San Marcos Auto Co.; garage damaged. Loss not stated. Hagerstown, Md.—Owen D. Sherley. Pen-Mar park; garage destroyed. Loss, \$8,000.

Chicago, Ill.—American Express Co.. 652 Lake street; garage damaged. Loss, \$25,000.

West Springfield, Mass.—Fred Norris, Worcester street; garage destroyed. Loss not stated.

Watertown, N. Y.—Alexander H. Cockburn, 305 5th avenue; garage damaged. Loss, \$1,500.

New Haven, Conn.—Ira E. Fonda, 636 Quinnipiac avenue; garage and three cars damaged. Loss, \$1,800.

#### Garageman Owes Large Tire Bill.

Claiming that the G. B. Garage Co., of Hempstead, N. Y., owes \$6,828.78 for tires and tubes which it received on consignment between April 30 and August 18, 1913, the Seamless Rubber Co. filed suit this week in the Supreme Court for New York county; accountings, it is stated, were to have been made the 25th of each month. The total of the consignments was \$12,004.98, on which \$5.176.20 was paid. Service was secured on George G. Bouthinon, vice-president of the company.

#### Goodyear Holds Vulcanizer's Notes.

The Goodyear Tire & Rubber Co., of Akron, filed suit this week in the Supreme Court for New York county against Arthur F. Rollin, who builds steam vulcanizers at 900 Bedford avenue, Brooklyn, N. Y., under the style Keystone Co. It is charged that August 23, 1912, he gave 14 notes for \$50 each, running from two to 15 months, the total face value being \$700, which amount is demanded.



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NEW YORK, JANUARY 15, 1914

## ABOUT ADVERTISING AUTOMOBILES.

Strange though it may appear, there are those who predict that the next great change that will come over the industry will be a change in the method of advertising automobiles, particularly in the general mediums. Those who hold this view maintain that present day advertising is not only far too wordful but that it is too largely directed to those already possessed of motor cars. They believe that future appeals must be not only much shorter and much more to the point, but must be so addressed as to create desire and arouse the interest of persons not possessed of or predisposed to the purchase of cars; and such men—and women—it is pointed out, cannot be attracted by or induced to read long-winded and more or less technical advertisements.

That the average advertising writer is too prolix does not admit of doubt; his effort seems to be to see not how little but how much type he can crowd into a given space wholly unmindful that very many more persons will be attracted by a striking short statement than by a mere mass of type, which too often is in the nature of an abridged catalog. It makes "dry" reading at best, and that sort of reading is not the

kind that counts. It may be informing to the man who knows all about automobiles but it means next to nothing to the ordinary individual, and nothing at all to the people who might be induced to become purchasers.

Whether the prophecy will ever come to pass, there is no doubt that at least a measure of reform in this direction will serve the interests of all concerned. The value of the short advertisement was never better illustrated than by the story attributed, years ago, to Nathaniel C Fowler, one of the first real masters of the art.

When a prospective client sought his terms, Fowler asked: "How much of an ad. do you want?" "Say, about 500 words," responded the prospective advertiser. Fowler named \$25 as his price. "Then how much will you charge for 250 words?" "Fifty dollars," was the reply. "And for 100?" "One hundred dollars."

When he recovered his aplomb, the would-be advertiser asked Fowler to explain why his scale of charges increased as his work decreased.

"Try to say in 100 words, which will be read by 100 times as many people, what you would say in 500 words, and then tell me if it isn't worth the difference," is the reply credited to Fowler, according to the story, which, whether or not it be true, is very much to the point.

It was Fowler, too, who declared that he had rather have a six-line reading notice than one of 600 lines, as he was sure it would be read by 600 times as many people—logic that is irrefutable.

The reverse of this picture, which in this case is known to be true, is typified by a young advertising writer, who, when asked why he put so many words into his advertisements, responded:

"Hell! If you don't give them lots of words, they don't think you are doing any work or giving them their money's worth."

Though it may be the soul of wit, brevity may not be the soul of advertising, but it is certain that automobile advertising, and advertising generally, can be made very much more effective if the effort to use fewer words, and not more of them, is carried out. It requires an article of a sensational nature or price, or a statement made in a sensational way, to obtain full value from long-winded announcements.

#### WHEN "GREATNESS" DISCLOSES ITSELF.

The true "greatness" of the great dailies in the great cities is never more vividly illustrated than during the annual automobile shows. During that period the great papers print as pure reading matter, designed for the consumption of the great green public, practically anything written by anyone who carries an advertisement of any sort in their columns; no others need apply. It is the fashion to laugh more or less uproariously at the methods of the Podunk Gazette but even that, famous, if mythical, publication "has nothing on" the great dailies during automobile show times.

#### AMERICAN ROAD CLASSICS TO BE RUN AS SCHEDULED

Original February Dates for Vanderbilt and Grand Prize to Be Adhered To — Californians Offer Rich Prizes.

Despite the many reports to the contrary, there has been no postponement of the dates originally set for the running of the Grand Prize and Vanderbilt road races over the Santa Monica course in California. Both races are to be run under the auspices of the Western Automobile Association and the Vanderbilt race will be run first, the date being Saturday, February 21st; the Grand Prize will be run the following Monday, February 23rd.

The Automobile Club of America already has issued its sanction for the running of the Grand Prize, and though the Contest Board of the American Automobile Association has not yet granted the sanction for the Vanderbilt, there is no doubt but that it will be issued in due course and after certain formalities have been gone through by the Santa Monica Bay Chamber of Commerce regarding the posting of the prize money, the guarding of the course, etc.

As heretofore, the Vanderbilt will be a non-stock event run under Class E rules and will be open to cars having less than 600 cubic inches piston displacement; last year's race, which was not run, was restricted to cars having not more than 450 inches displacement. The distance has been set at 35 laps of the 8.4-mile course, which is approximately 294 miles. The entry fee is \$250 per car provided the entry is made prior to February 9th. If made between that date and February 16th, when the lists close, the fee is \$350 per car. The prizes are to be \$3,000 first, \$2,000 second, \$1,500 third, and \$1,000 fourth. In addition, the winner takes possession of the Vanderbilt cup for one усаг.

The Grand Prize race, of course, will be a free-for-all event, as it always has been. According to the rules under which it is run, the distance cannot be less than 400 miles, and as there is no record for 500 miles in a road race, it is planned to establish one by making the distance that number of miles. The entry fee has not been set as yet, and the entry lists are in the hands of the Santa Monica Bay Chamber of Commerce and the Western Automobile Association. The prizes are the same as those for the Vanderbilt.



Jan. 14-21, St. John, N. B.—New Brunswick Automobile Association's second annual Maritime Motor Show in the Armoury.

Jan. 19-24, Washington, D. C.—Automobile Dealers' Association's show in Convention Hall.

Jan. 20-24, Baltimore, Md.—Baltimore Automobile Dealers' Association's show in the Fifth Regiment Armory.

Jan. 24-31, Montreal, P. Q.-Montreal Automobile Trade Association's pleasure vehicle show.

Jan. 24-31. Rochester, N. Y.—Rochester Automobile Dealers' Association's annual show in Exposition Park.

Jan. 24-31, Chicago, Ill.—Automobile Chamber of Commerce's national automobile show in the Coliseum and First Regiment Armory.

Jan. 26-31, Scranton, Pa.—Automobile show in the State Armory.

Jan. 31-Feb. 7, Minneapolis, Minn.— Minneapolis Automobile Trade Associations' seventh annual show in National Guard armory.

Feb. 2-7, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's pleasure vehicle show.

Feb. 3-7, Montreal, P. Q.—Montreal Automobile Trade Association's commercial vehicle show.

Feb. 3-7, Kalamazoo, Mich.—Kalamazoo Automobile Dealers' Association's fifth annual show in the State Armory.

Feb. 4-7, St. Joseph, Mo.--St. Joseph Automobile Show Association's Show.

Feb. 7-12, Seattle, Wash. — Annual show in the State Armory.

Feb. 7-14, Cincinnati, O.—Automobile Trade Association's show in Union Central Life Building.

Feb. 9-14, Buffalo, N. Y.—Buffalo Au-

tomobile Dealers' Association's commercial vehicle show.

Feb. 14-21, Pittsburgh, Pa.—Pittsburgh Automobile Show Association's show in Exposition Hall.

Feb. 16-21, Kansas City, Mo.—Annual show

Feb. 16-21, Toronto, Ont.—Toronto Automobile Trade Association's 10th annual show in Transportation and Horticultural Buildings.

Feb. 17-21, Salt Lake City, Utah—Annual show in the Keith-O'Brien building.

Feb. 18-21, Bloomington, Ill.—McLean County Automobile Club's show.

Feb. 21-28, Newark, N. J.—New Jersey Automobile Trade Co.'s show.

Feb. 21, Los Angeles, Cal.—Vanderbilt road race under auspices of the Western Automobile Association over Santa Monica course.

Feb. 21-March 4, Cincinnati, O.—Automobile Dealers' Association's show in the Music Hall.

Feb. 22-March 1, Hartford, Conn.— Automobile Dealers' Association's show in Park Casino.

Feb. 23, Los Angeles, Cal.—Grand Prize road race under auspices of Western Automobile Association over Santa Monica course

Feb. 23-28, Omaha, Neb.—Omaha Automobile Show Association's annual show.

March 2, 3, 4, Cincinnati, O.—Automobile Deàlers' Association's commercial vehicle show in Music Hall.

March 3-7, Fort Dodge, Ia.—Fort Dodge Dealers' Association's third annual show in the State Armory.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics' Building.

March 9-14, Des Moines, Ia.—Automobile Dealers' Association's annual show.

March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics' Building.

#### Schimpf to Assist Kennerdell.

So that there may be no halt in the efficiency of the present Contest Board of the American Automobile Association, Richard Kennerdell, the newly appointed chairman, has requested that all its members continue to serve. Furthermore, ex-Chairman William Schimpf has consented to serve as a member, and it is expected that a majority of the State representatives will remain in office.

#### Mudd Heads A. A. A. Touring Board.

Bringing to bear ripe experience as chairman of the Runs and Tours Committee of the Chicago Automobile Club, Frank X. Mudd has been designated by President Wilson of the American Automobile Association, as chairman of that body's Touring Information Board. He takes the place of Howard Longstreth, who after three years' service, has retired because of increased business.

#### MOTOR WORLD

## S. A. E. ANNUAL BANQUET IS NEAR-SPEECHLESS AFFAIR

More than 500 Break Bread and Listen to More Songs than Addresses—Henry Souther the Chief Speaker.

Just as the annual banquet in New York which last January marked the end of a year of unusual activity on the part of the Society of Automobile Engineers -or the beginning of a year of still greater activity-served as a great big "get-together" - a veritable jollification, in fact-so did the banquet which wound up the annual three-day winter session on Thursday evening last, 8th inst., serve the same purpose. It was a banquet at which restraint and not a few "boiled" shirts were missing and it was just about 25 per cent. more of a "get-together" than was the last. For whereas some 400 members and guests sat down to the 1913 function in the McAlpin Hotel, more than 500 of the 1,700-odd members attended the 1914 banquet, which was held in the Hotel Plaza.

Contrary to the usual custom, there was no "speakers' table," nor were the officers of the society and the more prominent among the guests seated at the "first" table. Instead, the officers were pretty well spread around, as were the guests whose names appear most often in print. In at least two respects, however, celebrities were grouped, one table seating Henry Souther, chairman of the Standards Committee, Henry B. Joy, president of the Packard Motor Car Co., Calvin W. Rice, secretary of the American Society of Mechanical Engineers, S. A. Miles, general manager of the National Automobile Chamber of Commerce, H. S. Firestone, president of the Firestone Tire & Rubber Co., W. C. Anderson, president of the Anderson Electric Car Co., and Herman F. Cuntz, treasurer of the S. A. E. Those who gathered about the other table were Howard Marmon, ex-president of the S. A. E., Elmer Thompson, general man :ger of the Automobile Club of America, Hugh Chalmers, president of the Chalmers Motor Co., Windsor T. White, president of the White Co., C. S. Mott. president of the Weston-Mott Co.. Howard E. Coffin, past president of the S. A. E., and H. G. Chatain, of the General Electric Co.

With the exception of Souther and Marmon, none present spoke more than a few words, and Marmon contented himself with commenting upon the prog-

ress that has been made by the society during the past year and in prophesying even greater progress for the year just commenced. Souther, however, spoke at considerable length, and the burden of his remarks amounted to an unusually strong appeal for greater cooperation between the engineer and the manufacturer in the furthering of the efforts of the society to effect more perfect standardization.

In drawing attention to the necessity for a closer relationship between manufacturer and engineer, Souther instanced the experience of the Master Car Builders' Association and similar bodies, the members of which, he said, have done all in their power and have loaned not only moral support but financial assistance to the work of their engineers in evolving standardization, upon the realization that the ultimate success of their respective businesses virtually depended upon it.

"The management that carries standardization to the highest degree of perfection must succeed," he said. "The management that does not do so must fail in the long run. To be specific, it is not possible, for instance, to produce a good cheap car made up of parts that are not standardized."

Souther continued, in part:

"Our industry is responsible for hundreds of special details of construction, of benefit neither to producer or consumer. These cost money which would be much better spent to improve quality or to save and thereby lessen cost. Our committees are avoiding all these unfortunate details of construction. . . . Some one has stated: 'A good definition

Some one has stated: 'A good definition of standardization in the engineering sense is to say that it means the elimination of the unnecessary.'

"There is much work to be done in connection with standardization. On the authority of a parts manufacturer, it appears that minor differences in construction, in many cases not even desirable, add at least one-third to the cost of the part in question. He states that within the next four years, and with the aid of proper standards, all this could be corrected. The automobile industry is in a state of change, a change from an artificial way of business to a substantial basis. Freak business methods and freak engineering must disappear. The society of Automobile Engineers is well equipped to perfect this impending movement. It asks the recognition that it has earned."

Following Souther's remarks, and a short talk by Secretary Coker Clarkson, the evening's festivities were brought to a close with the usual vaudeville entertainment.

#### Had a Real Novelty, He Had.

"Have we got anything new!" repeated the demonstrator at one of the accessory booths at the New York show. "I should say we have!"

"Lead me to it," was the request, for the novelty certainly didn't seem to be in sight. It really was, however.

"Here you are," gushed the demonstrator, laying his hand on a little lever with a checked surface. It looked like a small pedal, though it was designed and positioned to be operated by pressure of the hand.

Business of looking puzzled. "What's new about that?"

"What's new about it? Why, it's the first and only hand-pedal you ever saw. We're the first people that ever made a hand-pedal."

"Hand-pedal?" repeated the interrogator, looking up with a grin and expecting a responsive expression of facetiousness—which was not forthcoming.

"Certainly! No one else ever brought one out. We're the very first to do it. Ain't that new enough for you?"—all in dead earnest.

"It surely is; it's more than new," and the overwhelmed visitor beat a hasty retreat.

(Webster: "Pedal: Of or pertaining to the foot. . . . A lever for the foot.")

#### "Acquiring Transportation Experience."

"I see that steam is likely to come back as a motive power for trucks," he remarked as he looked up from the copy of last Sunday's New York Times he was reading.

"Who says so?" queried the Listener. The authors' name was then mentioned, "and the Times says he's had much experience in power transportattion," was added.

"Well, the Times is right. He's been getting that experience every day for several years riding to and from work on the subway trains."

#### Portugal Favors an American Truck.

Portugal, or, at any rate, the Portuguese war department, has taken a great liking to an American truck, specifically, the Federal, which is made in Detroit. It made its first purchase in March of last year and since has placed repeat orders four times, the last time one on the 3rd inst., when the cabled order called for four trucks. Altogether, the Portuguese government has purchased a fleet of no less than 17 of the Detroit-made vehicles.





#### GIVING ONESELF INITIATIVE

Acquiring the Quality Which Achieves Results—Self-Analysis First Essential in Mental Change—Realizing the Need.

Initiative—the power to start something—can be developed. It can be made to flourish if the man who wants it knows what he wants. The trouble with too many men is that they do not know what they lack and they will not take the trouble to find out. Yet, to the man with slender capital or no capital at all, initiative can be made an asset greater far than money. The rewards of initiative are large because the men of initiative are comparatively few.

#### Average Man Does as He's Told.

The average man does what he is told to do and no more. For years office systems which headed off any independent thought on the part of the workers have held undisputed sway. It is only within the last two decades that things have been different; and, even today, in many places the old methods of crushing and stifling the first sign of a new idea or a new way of doing old things is still in vogue. The wealth of inspirational literature, however, is doing much to make men see the new light and realize the value of personal development and personal expression in work. And the man who sits up and realizes for the first time that if he would succeed he must grow, sees a great many channels of assistance immediately available from which he may draw help of the most practical kind.

But the first thing a man must do is to realize the need of the thing he wants. He cannot shut his eyes and conclude that he is endowed with all the necessary qualities. On the other hand he will not assume the old-fashioned attitude of

"What I am I am"; he will face himself frankly and scrutinizingly eager only to get the facts so that he can build and strengthen his personality as needed. It takes some strength and some character to get to this point, but the man who gets this far realizes that a tremendous field of possibilities is open to him and that initiative is only one of many desirable qualities that can be developed by persistent cultivation.

### WINNING THE CONFIDENCE OF THE HUMBLER PURCHASER

A man with \$400 in his jeans strolled into the store of a dealer in new and second-hand cars in New York City, rather doubtfully hoping he would be able to pick up a good car for that amount of money. He could command more, but that was all he wanted to spend for the present. In many ways he felt rather small about looking for a car at such a low figure, and he was rather afraid to meet the salesman, whom he felt sure was accustomed to dealing in much larger figures.

#### Value of Glad-to-Meet-You Style.

The tall, blond salesman, however, came right towards him and, as it was too late to retreat, he faced the music. "Would you like to look at some of these cars?" suggested the salesman in a friendly, glad-to-see-you fashion. "Perhaps I may be able to help you find what you want if you will tell be about how much you are planning to spend; we have a great many cars at many different prices, and I am somewhat familiar with the values and would be glad to place my knowledge at your service."

Immediately the purchaser-to-be felt very much at home and in a heart-to-heart talk told the salesman just what he was looking for. The salesman treated him as courteously and as attentively as if the sale were one of \$3,000 models. It

took only a few minutes—not over half an hour—to conclude the transaction. Throughout, the salesman gave frank and honest opinions regarding the various cars. Of three models shown, including one at \$400, one at \$500 and one at \$550, he advised the purchaser to buy either the one at \$400 or the one at \$550 and showed him the exact reasons why.

The customer bought the \$400 car and went away satisfied and happy that he had found some one he could have full confidence in.

"Put me on your mailing list," he said, as he went out the door with his receipt.

### ONE BETTING SALESMAN WHOSE BET "MADE GOOD"

Salesmen who wager generally do so because they do not know how otherwise to convince the prospect that what they say is true and generally broad statements backed up by an offer to bet fail of their object; sometimes, however, a wager makes good, but it requires the cleverness which was exhibited by A. G. Somerville, sales manager of the Stearns-Knight agency in San Francisco.

It was Somerville's knowledge of human nature that prompted his act. A prospect had proved difficult to "close" and it looked as if the sale were going to be a long-drawn-out affair, if it did not fall through entirely. The salesman relied upon his knowledge of the man and made a bet.

#### Peculiar Wager that Won a Check.

The bet was that he could take a Stearns car across the ferry to Oakland and return with the motor running—which is contrary to ferry rules—and that the deck hands or passengers would not know the motor was in action; if Somerville "got away with it" the prospect was to buy; if not, the sale was off. When they returned to the salesrooms the prospect wrote his check.



### PICTURE WINDOW DISPLAYS

Value of Placing Car by Itself Where It Compels Attention of Passersby— Benefits of Studied Lighting Effect and "Balance."

On the main street of a big Western city is a very attractive garage-sales-room. The window opening onto the sales floor is large and it is always clean; that is one of the reasons why the place always looks so exceedingly attractive. There is another reason, and that lies in the fact that there is never more than one car occupying the "center of the stage" at one time. In other words, while there are usually two or three cars on the sales floor they do not have to fight with each other for attention.

#### One Car Monopolizes Scene.

One car dominates and fills the eye. It stands out from the rest in a way that challenges attention and makes a beautiful picture. At night when the electric lights are switched on this picture-effect is even more marked, and the man who stands looking in the window for a short time is sure to hear hundreds of passers-by remark on the beauty of the car, the pleasing effect of the lighting, and so forth. Not a few motorists have been known to slow up their cars and pause for a few moments to take it in.

A few blocks further up is a window that looks like a storeroom. Six or seven cars rub each other for place, and in order to get them all in the window they are all shown in exactly the same position—head on. The result is neither pleasing nor attractive. It is in marked contrast with the window before mentioned, and the contrast is very much to the disadvantage of the crowded window. If you once get into your head the fact that a window, like a picture, depends for its interest upon the effective dom-

ination of one thing—one thought at a time—you will never make your show windows look like a pawnbroker's shop—crowded to the guards; you will study lighting effects, position, grouping, balance and all the other points that require consideration in the building of an attractive picture.

#### EFFECT OF MAKING A BOOK-KEEPER AN OFFICE MANAGER

Often the dealer is a good salesman and a poor manager. That is, he may be remarkably successful at selling cars but wofully deficient in managing his office and his shop. And this is no criminal shortcoming. It is impossible for every man to compass within his personality every good quality. The only thing is to do the best you can and not jolly yourself with the idea that you are a great deal better than you really are.

One dealer discovered that while everybody in his office force of seven people was extremely busy when he was on hand, it was vastly different in his absence. There were no tangoes in the office, but there was a great deal too much conversation and laughing and visiting for the good of the business; and the man who told him about it was a customer.

#### Good Sense Led to Solution.

He was chagrined and disappointed; he had thought there would be more loyalty. But his good sense came to his aid and, instead of giving everybody a good "calling down," he had a heart-to-heart talk with his bookkeeper and wound it up by giving him the title of "office manager" and holding him responsible for efficiency and conduct of the office. The net result in a space of less than two months was a marked increase in business efficiency and the climination of two names from the payroll. Five did the work of seven and did the work better.

The work was planned and the "office manager" saw that it was carried out in a thorough way that had never seemed possible when he was simply a "bookkeeper."

#### GETTING THE MOST FROM TWO DIFFERING TYPES OF SALESMEN

"Have you seen Goldsmith lately?" queried a dealer of one of his salesmen.

"Saw him 10 days ago, and there is absolutely nothing doing; he has no idea of buying a car this year," replied the questioned one wearily.

"Glad you called on him; you must have done good work. Here is his order for immediate delivery; got it this afternoon," briefly announced the busy dealer.

#### Good Missionary But Not "Closer."

The dealer meant exactly what he said when he remarked he was glad that salesman had called there. He knew the men who were working for him intimately and he was well aware that the man before him had splendid ability as a missionary but lacked that peculiar force and power that makes a man conspicuously successful as a "closer." He did not for one minute undervalue the man's services; he knew the man's average was fair and he watched all the negative reports like a hawk and then followed them up closely, with the result that many orders were landed which would have entirely escaped a less shrewd observer. This dealer figures on the law of averages. He has a number of salesmen who are pluggers. They make their calls regularly and systematically and they get sufficient sales to pay their way.

"As long as my men work regularly I'll take a chance on them against the brilliant ones who work in streaks," he remarked confidentially to the man in the chair next to him, as they journeyed homeward from the New York show.

### SELLING CARS WITHOUT LIFTING THE HOOD

### Dickson Interestingly Discusses Educational Campaign Undertaken by National Company—Points Out Its Logic and Proves It is Not as Radical as It Seems—Performance vs. Specifications.

They were talking of salesmen and salesmanship, always burning topics.

"We are trying to educate our salesmen and dealers to sell our cars without raising the hood," vouchsafed George M. Dickson, general manager of the National Motor Vehicle Co., of Indianapolis, who was a party to the discussion.

"What's that?" interrupted one of his hearers in amazement.

"I say we are trying to educate our salesmen and dealers to sell our cars without raising the hood," repeated the Indianapolis man.

"Rather radical, isn't it?" was suggested.

"Not so radical as it seems at first blush. Tell me," Dickson said suddenly, "what kind of a spring is inside yourwatch? How many gear wheels has it and of what size are they? What operation is taking place inside it at this moment? You don't know and you don't care. All that you are concerned with is its performance. In fact, when you look at the watch your concern goes no further than its face. Not once in a thousand times when you look at it to discover the time do you consider what is going on behind the white dial.

#### Mechanism That Does Not Count.

"You are not in the least concerned with its constantly operating mechanism—you are absolutely unconscious of it. When you bought it the dealer did not take the works out of the case and talk of the springs and gears and pinions. If you sought to buy a Steinway piano you would not dig deep into its insides to discover what they are, or if a Victrola was in view you would not go any deeper. You bought your watch on faith and performance and on the reputation of its maker, and the same is true of Steinway pianos. Victrolas and nearly all other well known articles.

"That is the way we are now trying to sell National cars. Why shouldn't we? It is merely what is being done in hundreds of other trades. We are selling National performance and reputation and not National specifications. It is easily possible that two cars having similar parts and similar specifications may

differ largely in performance and merit. That is why we believe it is better to sell results guaranteed by a responsible company than to sell specifications."

"But doesn't that policy imply that it will be no longer necessary for dealers and salesmen to thoroughly know their cars?" was interposed.

#### Necessity for Knowledge Remains.

"I think not," responded Dickson.
"Few salesmen are worth much who do
not know all about the goods they are



GEORGE M. DICKSON

selling, and our policy means that, if anything, they must know more about them than ever before. As he cannot hope wholly to avoid questions, the salesmen must be equal to every emergency and able to answer any problem when it arises. It is a fact, however, that the average salesman is too prone to talk of engines, gears, axles, etc., and to raise the hood or lift up the floor boards when there is absolutely no necessity for doing so. Such talk is Greek to many purchasers and often means merely a waste of time and breath.

"Take axles, for example: Admitting that a particular axle is universally recognized as a good one, it may be good only because it fits the weight and other proportions of certain cars; it may be wholly unfit for others. The mere fact that a certain axle is good for one car

doesn't mean that it is good for all cars. If, however, the proper material is placed in the proper place and the car is properly built to produce satisfactory results the purchaser can ask no more. It is results he seeks, and when any car, as the culmination of many years of use, proves beyond peradventure that it gives such results, what does it profit any one to look under the hood or inspect the differential? I don't believe in making a secret or trying to hide anything, but I do maintain that the average salesman makes his task unnecessarily hard by inviting fruitless questions which serve no better purpose than to confuse the prospective buyer, even when he understands the technicalities of which the salesman unburdens himself.

#### Hang Sales Arguments on Performance.

"It is our belief that it is possible to sell National or any other quality car on performance alone; that there is no more need of raising the hood than there is of exposing the works of a watch or of a Victrola. We believe it is desirable that the user be as unconscious of what is going on inside the engine as he is unscious of the operation of the watch in his pocket. Nowadays there are good cars that are just as reliable as good watches and there is no reason why they should not be sold on the same plan.

"The responsibility—the whole burden of making good is the burden of the manufacturer, and when he has acquired a reputation for making good, what more is really necessary? We are thoroughly in earnest in believing that it is possible to sell automobiles without raising the hood, and we mean to fight it out on that line.

"The thought may startle many dealers and many salesmen, but if they stop to think how many hundreds or thousands of other articles are sold in exactly the same way they will begin to realize that there is nothing very radical or irrational about it and will talk less about mechanisms and more about results, and when they do so they will relieve themselves of a lot of the worries and other brain sweats which periodically afflict them."

### PROGRESS MARKED BY S. A. E. ANNUAL MEETING

# Lengthy Program Carried Through in Two-Day Session in New York —Standard Electrical Requirements Adopted and Truck Wheel Sizes Standardized—The Papers and Reports Presented.

Although the list of papers scheduled to be read before the annual winter session of the Society of Automobile Engineers, which was held at the Automobile Club of America, in 54th street, New York, during Tuesday and Thursday last, 6th and 8th insts., no meeting being held on the intervening Wednesday, was a lengthy one, by adhering rigidly to the time schedule laid down by Secretary Clarkson, it was found unnecessary to "shelve" any of the papers, thereby marking a difference from previous meetings, at which it always has been necessary to "hold over" some of the business for the next meeting. In addition to the numerous papers, all of the various Standards Committee reports also were discussed with the exception of one -the report of the Nomenclature Division-which was not presented owing to the absence of Chairman E. J. Stoddard.

Among the 18 papers that were presented, W. H. Conant's paper entitled "Storage Batteries" probably holds more of interest to the average man in the street than do any of the others, which, being essentially more or less highly technical in nature, must be proportionately unintelligible to those other than engineers. The other 17 papers are, briefly, as follows:

"Necessity for More Special Data for Electric Car Designers," by W. J. B. Thomas, chief engineer of the Century Electric Car Co.; "Automobile Effectiveness," by D. L. Gallup, professor of Gas Engineering, Worcester Polytechnic Institute; "Final Drive for Motor Trucks" (introduction by Arthur Slade, consulting engineer)-(a) Internal Gear, by V. V. Torbenson, engineer, Torbenson Gear & Axle Co.; (b) Double-Reduction Live Axle, by B. B. Bachman, assistant engineer, The Autocar Co.; (c) Worm Gear, by John Younger, Engineer, Pierce-Arrow Motor Car Co.; (d) Chain, by H. D. Church, Packard Motor

"Gasolene Locomotives for Mines," by Joseph Anglada, Consulting Engineer; "Development of Electric Tractor for Handling Freight Cars Over Tracks Laid on City Streets." by T. V. Buckwalter, Engineer, Pennsylvania Railroad; "Taxicab Specifications," by L. P. Prossen, formerly mechanical superintendent Yellow Taxicab Co.; "Radiators," by J. W. Cain, Chief Engineer, McCord Mfg. Co.; "Workshop Organization," by Chas. G. Renold, Director, Hans Renold, Ltd.; "Notes on Scientific Shop Management," by Henry W. Allingham, Production Engineer, Hans Renold, Ltd.

"The Exhaust Discharge and Proper Manifold Design," by F. C. Mock, Stromberg Motor Devices Co.; "An Electrically Controlled Dynamometer for Testing Gas Engines," by R. C. Carpenter, Professor Experimental Engineering, Sibley College, and Nathan C. Johnson, formerly fellow of Sibley College; "Shifting Gears by Electricity," by Frank N. Nutt. Chief Engineer, Haynes Automobile Co.; "Possibilities of the Cyclecar," by William B. Stout, associate editor Motor Age.

#### Bearings and Broaches Standardized.

Among the numerous reports of the divisions of the Standards Committee that were rendered, the Fifth Report of the Ball and Roller Bearings Division was one of the few accepted, and it brought forth little or no discussion. The report recommends, briefly, the extreme allowable tolerances as recommended by the bearing makers, and incidentally, incorporates a new definition of eccentricity, which is stated to mean, in the case of the inner race, "the lack of running truth, noticed upon the stationary outer race when rotating the inner race balls upon true centers," and in the case of the outer race, "that lack of running truth shown upon a suitable indicator during the rotation of the outer race and balls upon the inner race fixed upon a stationary arbor." In the absence of a standard method of measuring axial freedom, it is recommended that refinite figures for the allowable amount of such freedom be eliminated from the recommended practice of the society, as contained in the report accepted in January, 1912.

Although the Sixth Report of the Broaches Division (chairman, C. W. Spicer) was accepted as read, covering six-splined shafts. it was afterward referred back to the Standards Committee

upon Spicer's recommendation that it is advisable to examine also the practice with regard to four-splined shafts. The recommendations of the committee are as follows:

- (1) That in the six-spline shaft the splines and grooves should be as nearly as possible of equal width—that is, the outside circumference of the six-spline shaft should be spaced into twelve approximately equally divided divisions.
- (2) The design should be such that so far as possible the same broaches can be used for developing different required depths of splines.
- (3) That the nominal diameter in all cases be taken as the outer diameter of the shaft.

The fourth report of the Electrical Equipment Division (chairman, Andrew L. Riker) was adopted as recommended practice, though one change will be made in the version as printed in the Transactions of the Society. It is, briefly, that in order to avoid confusion, the word "lead" be inserted before the word batteries. The report in full is as follows:

#### INSULATION REQUIREMENTS OF ELEC-TRICAL APPARATUS AFTER INSTAL-LATION ON GASOLENE AUTO-MOBILES.

Electrical apparatus for use on gasolene automobiles, when operated on circuits of from 6 to 25 volts, shall be capable after installation of withstanding for one minute an alternating potential of 500 volts, the test being applied between the conducting circuit and frame or ground. In the case of apparatus with one terminal grounded, the ground connection shall be removed at such a point as will permit the test being applied to all parts of the circuit which, in actual use, will be subjected to working potential.

Exception.—Batteries will not be subjected to any insulation test above their working potential.

#### DIMENSIONS OF (LEAD) BATTERIES FOR LIGHTING AND FOR COMBINED LIGHTING AND STARTING SERVICE.

The overall width of the battery, measured from side to side of case, shall not exceed 71/2 inches.

The overall height of the battlery measured from bottom of case to top of handles shall not exceed 9½ inches.

The overall length of the battery, measured from end to end of case, including handles, shall vary according to the capacity of the battery and its details of design. Handles shall, as standard, be placed at the ends of the battery, and provision for hold-down devices shall, as standard, be made at the ends of the battery. The space occupied by such handles and hold-down devices shall be in the direction of the length of the battery only, and not in the direction of its width. Terminals and connections shall not extend above the handles; the latter to be the higher point.

#### Two Separate Ratings for Batteries.

RATINGS OF (LEAD) BATTERIES FOR LIGHTING AND FOR COMBINED LIGHTING AND STARTING SERVICE.

Lighting batteries shall be rated at the capacity in ampere-hours of the battery when discharged continuously at a 5-ampere rate to a final voltage of 1.8 per cell, the temperature of the battery beginning such discharge being 80 degrees F.

Batteries for combined lighting and starting service shall have two ratings, of which the first shall indicate the lighting ability and be the capacity in ampere-hours of the battery when discharged continuously at a 5-ampere rate to a final voltage of 1.8 per cell, the temperature of the battery beginning such discharge being 80 degrees F. The second rating shall indicate starting ability and shall be the rate in amperes at which the battery will discharge for 20 minutes continuously to a final voltage of not less than 1.65 per cell. The temperature of the battery beginning such discharge to be 80 degrees F.

#### Fuse Dimensions.

Fuses for use on circuits of 25 volts or less and 30 amperes or less shall be of the enclosed type and of the dimensions given below:

Overall length, 1½ inches; diameter, 13/32 inch; length of contact, ¾ inch.

Fuses to be marked "25 volts" and their carrying capacity.

#### Wiring Systems.

The Division favors the single-wire system, but it is in its opinion too early to recommend the same as practice, sufficient time not having elapsed to demonstrate the superiority of this system over the two-wire system.

Although the Truck Standards Division (W. P. Kennedy, chairman) has had

under consideration several projected possibilities for recommended practice, only one recommendation. concerning wheel sizes, was made. Research has made evident that the sizes of truck wheels most in use are 32 inches, 36 inches and 40 inches. Hence, it is recommended that the varieties of wheel diameters in the future equipment of motor trucks be reduced to three, having nominal diameters of 32, 36 and 40 inches. This portion of the report was accepted.

#### Propose Standard Wheel Diameter.

though purely for considerationn.

Tentative reports covering the activities

of the committee in the fields of truck

radiator, power plant and spring and

axle standardization also were rendered.

The Fourth Report of the Miscellaneous Division (chairman, Arthur Holmes) is essentially a progress report and has to do principally with proposed standardization of air pump mountings, the dimensions laid down representing the average installation. This division also proposed a new type of spark plug shell to take the place of the old standard A. L. A. M. shell; its chief distinguishing feature is an extension which serves to assist in inserting the plug in its hole and also to protect the threads.

The first report of the Pleasure Car Wheels Division (chairman, Henry Souther) also is a progress report in which exception is taken to the previously practiced method of testing the strength of rims by subjecting them to bursting strains which destroy them. It is advanced, instead, that the better method is to test them for deflection between the tire fastenings either pneumatically or hydraulically, the pressure and the amount of deflection being predetermined. It is proposed, also, to attempt further to standardize rims so that there will be but one standard size -namely, 25 or 27 inches. With either size wheel diameter adopted as standard, it is pointed out, the number of standard tire sizes then would be reduced to seven, assuming that the largest tire section is six inches, the diameter being either 37 or 39 inches.

#### Springs and Motors Discussed.

Neither of the two remaining reports—Motor Testing Division (chairman, J. O. Heinze) and Spring Division (chairman, Harold L. Pope) was accepted as recommended practice. In the former, attention is called to the necessity for standardizing spring lengths, master leaves, eye diameters, loads to spring widths, and testing. In the latter, it is proposed, in view of the wide diversity that exists

in methods of motor testing, that some standard form of test be adopted, for which purpose standard data sheets, drawn up by the committee, were offered for discussion. The work of the Division is essentially a continuation of its previous work.

#### Why Metal Tools Are Cold to Touch.

It is quite likely that those who work alternately with wooden and metal handled tools have noticed a rather peculiar phenomenon when changing from one to the other—namely, that on a cold day the metal handled tool feels much colder than the wooden handled one, and this despite the fact that their temperature, as revealed by a thermometer, is precisely alike. The seeming mystery is easily explained, however, and is due to what is styled by technicians, the "relative conductivity" of the materials.

Thus, for instance, steel or iron is a much better conductor of heat than is wood and for this reason it absorbs heat from the hand more quickly than does wood. As the wood handle absorbs heat slowly, it does not lower the temperature of the hand as quickly as does iron or steel and therefore feels somewhat warmer to the touch. When the temperature of the atmosphere is higher than normal, on the other hand, the phenomenon is exactly reversed. The metal then feels warmer than the wood because it gives up its heat to the hand more quickly than does wood. Which explains, briefly, the preference, often unexplainable, of some workmen for wooden handled tools.

#### Universal Casings that Bear Watching.

Owing either to too loose lacing, broken lacing, or a punctured cover, the grease that serves to lubricate universal joints may be thrown out by centrifugal force and leave the bearing surfaces without lubricant. It is a good plan, therefore, to examine such casings from time to time to make certain that they really are serving the purpose for which they are intended. Most universal joints are covered in this way, but where no cover is used, the lubricant should be a fairly stiff grease lightly applied and the superfluity carefully wiped off to discourage the collection of abrasive dust and dirt.

#### To Remove Tar from Car Bodies.

Any man who once was a boy and got tar on his hands ought to know how to go about getting tar off the body of an automobile. Butter liberally applied to the black stuff will soften it and permit its removal with little difficulty.

#### MOTOR WORLD

### FEWER DEALERS DISPLAY MORE AT PHILADELPHIA

Members of Trade Association Uncover 60 Gasolene and Four Electric Makes - French Court Setting.

In a new building, considerably larger than has been used in the past, and in a new setting, Philadelphia's largest, which is also Philadelphia's 13th annual, automobile show was opened on Saturday night, 10th inst., and the lights will twinkle and the band will play until Saturday night, 17th inst. As usual, the Philadelphia (Pa.) Automobile Trade Association acts as sponsor for the event, which is housed in the new Metropolitan building at the corner of Broad and Wallace streets.

Although the show, on the whole, is slightly smaller, insofar as the number of dealers exhibiting is concerned, for the reason that commercial vehicles find no place among the exhibits, the number of cars on view is greater, no fewer than 60 different makes of gasolene cars and four electrics being set out; also there are four accessory displays, the number being restricted to members of the trade association, and all these exhibits are made by a total of 57 exhibitors.

No pains have been spared to transform the building in which the show is housed. In the concrete, the setting reproduces a Louis XVI. French court scene, the color scheme being old rose, ivory and gold, with a profusion of artificially festooned natural foliage. A somewhat startling effect has been obtained by placing at the top of each of the immense columns that support the ceiling, four large spans or brackets, radiating to the four points of the compass, the effect being that of a number of great arches. At the head of each column great rosettes of colored Tungstens radiate light and seeming warmth. Side walls are frescoed in French panels and the finishing touch is lent by great mosaic balls of light hung over each exhibit, with the name of the car picked out in the design. The complete list of exhibitors is as follows:

V. P. Padula, Abbott-Detroit and Havers; American Automobile Co., American; C. A. Haynes Co., Baker electrics; Buick Motor Co., Buick; Automobile Sales Corporation, Cadillac; Cartercar Motor Co., Cartercar; Chalmers Motor Co., Chalmers; Chandler Motor Car Co., Chandler; Automobile Co. of Philadelphia, Cole and Marmon; W. W. Gawthorp, Davis; J. C. Bartlett, Argo and Detroit electrics; Detroiter Co. of Philadelphia, Detroiter; J. H. Shoemaker & Co., Dorris; Fiat Motor Co., Fiat; Ford Motor Co., Ford.

Sweeten Auto Co., Franklin; Johnson Motor Car Co., Haynes; Gomery & Schwartz Co., Hudson; Tioga Auto Co., Hupmobile; Jeffery Motor Co., Jeffery; Kissel Motor Car Co., Kissel; Krit Motor Co., Krit; Locomobile Co. of America, Locomobile; Bigelow-Willey Co., Lozier and Paige-Detroit; Gibbons-Wetherill Service Co., Maxwell; Mercer Auto Co., Mercer; Fanning-Paxon Co., Mitchell; Minerva Motors Co., Minerva and Moon; Motor Sales Co., National and Henderson; Oakland Motor Co., Oakland; Seltzer-McGowan Co., Ohio; Oldsmobile Co., Oldsmobile; Overland-Marion Co., Overland; Packard Motor Co., Packard; Colonial Motor Co., Partin-Palmer; Peerless Motor Car Co., Peerless; Foss-Hughes Motor Co., Pierce-Arrow; E. C. Johnson Co., Reo. and Premier; Regal Sales Corporation, Regal; Thornton-Fuller Co., Simplex and S. G. V.; Stanley Motor Carriage Co., Stanley steam cars; F. B. Stearns Co., Stearns-Knight; A. G. Spalding & Bros. Stevens - Durvea: Studebaker Corp., Studebaker; S. Blockson Co., Stutz; Touraine Motor Co., Touraine; Standard Motor Co., Velie; White Co., White; Garford Philadelphia Co., Willys-Knight; Winton Motor Carriage Co., Winton.

#### Connecticut Withdraws from A. A. A.

Among other things, "because the State was not given proper representation at the recent annual meeting of the national body," which apparently means that some men who wanted office did not get it, the Connecticut State Automobile Association is mad and refuses to play or, in other words, has withdrawn from the American Automobile Association. The chief of the other causes is the belief that the dues paid are out of all proportion to the benefits derived.

The formal withdrawal took place at the annual meeting of the State Association in New Haven on Monday last, 12th inst., at which time the following officers were chosen: President, J. M. Emerson, of Ansonia; vice-president, F. Spencer Goodwin, of Hartford; secretary, Chas. Marcy Robinson, of New Haven; treasurer, F. C. Howe, of New Haven. Robinson was also named as chairman of the legal and membership committees, and Arthur Fifoot, secretary of the Automobile Club of Hartford, was made chairman of the good roads and sign posts committee.

### CLEVELAND'S "12th ANNIJAI." SET IN AN ITALIAN GARDEN

Immense Crowd Gathers Early to View the More Than 250 Separate Exhibits - Trucks and Cars "Lined up" Together.

Not even a frigid north wind, laden with snow flurries, could keep the crowd away from the Cleveland (O.) Dealers' Association's twelfth annual show, which was opened in that organization's home city on Saturday night, 10th inst., and which will hold the boards until Saturday night, 17th inst. Long before the opening ceremonies, a great crowd gathered and it is estimated that by 8 o'clock 10,000 persons had entered.

The stage setting for the show, if such it may be termed, is not exceptionally elaborate, though the decorations are more than ample to disguise the ordinary nakedness of the walls. The arrangement is supposed to represent an Italian garden and the color scheme in the conglomerate is a combination of greenishness and whitishness. All told, there are more than 250 separate exhibits that run the gamut from motorcycle to cyclecar to automobile to motor truck and dip deeply into accessories. A partial list of the exhibitors is as follows:

Vehicles: Joseph H. Greenwald, Hudson; W. H. Barger Co., Lozier and Jeffery; Baker Motor Vehicle Co., Baker electrics; R. M. Allen Motor Sales Co., Velie; Cuyahoga Sales Co., Chandler: H. O. Seecrest, Detroit electric: Winkinson, Imp cyclecar; Willys-Overland Co., Overland and Willys-Knight; Packard Motor Car Co., Packard; Auto Sales Co., Pathfinder and Reo; White Co., White; Rauch & Lang Carriage Co., Rauch & Lang electrics; Weaver-Twelvetree Co., Pierce-Arrow; Ohio Buick Co., Buick; Neighbors Motor Co., Hupmobile; M. D. Coates, Pullman and Detroiter; V. R. Hall Automobile Co., Cartercar; A. R. Davis Motor Co., Studebaker; Standard Motor Truck Co., Standard commercials; Peerless Motor Car Co., Peerless; Chalmers Motor Co., Chalmers; Hamilton Motor Car Co., Allen; Cleveland Cadillac Co., Cadillac; Oakland Motor Co., Oakland; Eiseman Automobile Co., Apperson; W. H. Gabriel Carriage & Wagon Co., Ohio; Eckenroth Sales Co., Franklin: Richardson Motor Car Co., Cole: Mitchell-Lewis Motor Mitchell; Jackson Motor Sales Co., Jackson; Dunham Motor Co., Marion; Grant Distributing Co., Grant; Euclid Square Supply Co., Saxon.

#### MOTOR WORLD

## COMMERCE TRUCK MAKERS EXTEND THEIR OPERATIONS

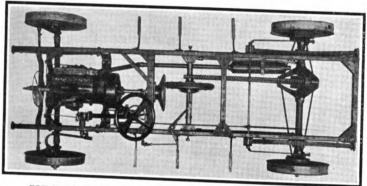
Three Years' Good Work Encourages Increased Production—One Chassis and Four Body Types Still to be Built.

Three years' continuous use of commercial motor vehicles, all designed on exactly the same principle and all embodying mechanical features that have been changed only in details, have convinced the Commerce Motor Car Co., of Detroit, that they are on solid ground, so to speak, and that they can safely do business on a larger scale. The business is therefore being increased; more cars

The motor of the Commerce car is a four-cylinder Northway with block-cast cylinders of the L-head type. It is distinctly a long-stroke motor, the bore and stroke being 3 inches and 41/2 inches. respectively. While it is easily removable from the car, if necessary, most of the work needed can be done without removal, including the adjustment of the main bearings. In fact, it is only for something serious and exceptional that removal is required. Ignition is by Bosch high-tension magneto, and the timing of the spark is set so that the driver has no control over it-which is a good thing, so far as the average small car driver is concerned. The motor is lubricated by oil circulated by a plunger pump and splashed by the connecting rods in the conventional way; a sight-glass on

ternal expanding brakes on the rear wheel drums, operated by the usual pedal. For emergency application a friction reverse is employed, which is said to be extremely effective. The steering gear is irreversible, of the worm-and-split-nut type, and there are double springs in each end of the drag link, especially designed for commercial service. The wheelbase of the car is 102 inches.

All cars are sold with complete equipment, which includes, in addition to the usual tools, jack, tire repair outfit and so on, a combination electric and gas lighting system, lamps and electric horn. The floor space of the standard body is 64 inches long, 42 inches wide and 52½ inches high. The tail gate, where one is fitted, is 22 inches high. With a normal



TOP VIEW SHOWING SIMPLICITY OF COMMERCE TRUCK CHASSIS

are being turned out, more agents taken on and, generally, the Commerce motor trucks are being exploited on a broader basis than in the past.

It always has been the policy of the company to produce but one chassis model—a light delivery type—to which several bodies are fitted. The bodies now listed are an open express, full panel with end doors, full panel with end gate and a stake body with canopy top and canvas side curtains. Not even the wheelbase of the chassis is changed in any case, all the bodies fitting the same frame.

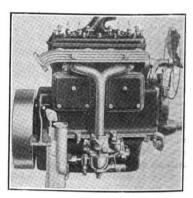
As for the mechanical features of the machine, the transmission system is the most noticeable, as it is of the friction type and, further, of the simplest design, having but two disks. The driving disk is mounted on the engine shaft and the driven disk on a cross-shaft from which a chain drives to the live rear axle. The only part of the change-speed system that is subject to much wear is the driven friction disk, which has a fiber rim. This rim can be replaced in half an hour's time at a cost of \$3.75.

the dash serves to assure the driver that the oil is flowing as it should.

As befits the service for which it is designed, the frame is of substantial construction, the main members being of pressed channel steel four inches deep with five cross members, the whole structure thoroughly gusseted and hot-riveted together. The springs are all semi-elliptics with swinging shackles. A Weston-Mott rear axle is employed, each live shaft being carried in two Hyatt roller bearings, and the differential is of a special heavy-duty type. The front axle also is of Weston-Mott construction; the steering knuckles and arms are re-enforced.

The wheels, of wood, have 12 spokes each and are fitted with Q. D. pneumatic tires 32 x 3½, or with 34 x 2½ solid tires. The price of the car is the same whether solid or pneumatic tires are ordered, but the makers strongly recommend the pneumatics, which have proved, in their experience, thoroughly adapted to the light delivery work for which the machine is designed.

For service application there are in-



INTAKE SIDE COMMERCE MOTOR

load and under good road conditions the recommended speed is from 15 to 20 miles an hour.

#### Horse Thief Society Deserts Horse.

The Union Society of Jenkintown, Pa, which was formed 102 years ago to make life unpleasant for horse thieves, having outlived its usefulness, has turned its attention to automobiles; at its 102d meeting in the Jenkintown House last week the society decided to embark in the automobile insurance business; its policy covers theft only. The risks which the society will assume will not be greater than \$200.

#### Going Back to Spring's Beginning.

The first patent on a spring was obtained in 1804 by Obidiah Elliott, an English spring maker. The patent covered a practical full-elliptic spring. Spring making dates much further back than that, however, flat plate springs having been made in France and Germany as far back as 1740, about the time the crucible process for making fine steel was originated.

### SALESMAN NOT THE MAN WHO "BEGS" A SALE

# Selling on Merit of Goods and Ability of the Man Preferable to the Part of a Favor Seeker—Reilly Emphasizes Necessity for Retaining Self Respect Even When Seeking Business.

"Well, Hube, old top! You're doing nicelv!"

Tommy Trumbull tossed his hat to a peg on the wall, hung up his overcoat,

Only for your bit of advice I would have been sitting around yet waiting for you to give me some more prospects to chase up."

"YOU'RE NOT BEGGING AN ORDER, ARE YOU?" ASKED REILLY

kicked his rubbers skilfully to their proper resting place beside his desk and before he had been in the office as much as a mniute he had his prospect cards out and was making a note under the name of Hubert K. Smith.

#### Tommy Grateful for Reilly's Hint.

When "Hube, old top" had been replaced in the file and the drawer shoved shut with a modest little bang Tommy arose, kicked an annoying little snowball from his left heel and gingerly deposited it in the gaboon.

"How's Smith coming?" inquired Reilly, who dropped a letter and a handful of brightly colored literature in the waste basket and turned to peruse the next epistle on the pile of mail.

"Oh. fine! Fine!" effervesced Tommy.
"I think I'll get him in a few days. He looks good to me!"

"That's good," was Reilly's meditative response, as he divided his mind between Tommy and the letter he was reading.

"And, say!" blurted the youth, "I want to thank you for what you told me last week about 'picking prospects out of the air.' That's how I got on the trail of old Smith, if you happen to remember.

"You can keep busy now, can you?"
"You bet, I can! Busy's no name for

maintain the air of a man who is proceeding well with an extremely difficult task.

"How'd you sell him?"

"Just what do you mean?"

"How'd you get him coming? What's the point that seemed to make the hit with him?"

"Oh!" Light broke on Tommy's face.
"I think he's buying mostly because I haven't been in the business long and he wants to see me make good."

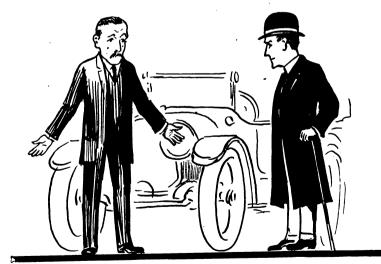
"What!" snapped Reilly.

#### Youth Scents and Finds Trouble.

Tommy scented trouble. Just what, he didn't know, but he did know that he very likely was destined to find out.

"Yes," he replied, "our folks and the Smiths have known each other for a long time and old Smith thinks pretty well of me, unless I'm mistaken."

"You're not begging an order, are you?" asked Reilly, as he turned his gaze full upon Tommy and gave him one of those looks which the father of Mutt and Jeff represents by a straight dotted line



"OLD BASTIAN IS THE KING SALE BEGGAR OF THIS TOWN"

"How about your friend Smith? Did he come easy?"

"Not so very," replied Tommy with a dubious expression of countenance. "It might be easier." Tommy continued to "Begging? I'm stuck again," said Tommy, who determined to hold his own at any cost. "Just what do you mean?"

"I mean, are you asking Smith to buy this car to help you out?"

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"Well," slowly responded the youthful salesman, "not exactly that, but that element may have entered into the sale to some extent."

"I wouldn't do it! I'd lose the sale first!" said Reilly.

"Isn't it the right way?" innocently asked Tommy.

The air of innocence, as usual, won Reilly: whatever feelings he may have had when he discovered the begging tactics of his protege disappeared as effectually as do some dealers when they see an irate customer coming down the street.

"It's poor practice, son; I wouldn't do it. It certainly is not the right way. If you can't sell a man on the merits of family; I would do that if I had to, but not until then.

"It's a habit you want to avoid acquiring," continued Reilly. "You are just beginning your career as a salesman and you have all kinds of ability; you ought to succeed, but you are making it harder for yourself every time you try to beg an order. If you beg this order from Smith it will be a mark to your credit on the sales record, but the next sale you try to make is going to be that much harder.

#### True Salesman Sells Like Business Man.

"It won't get you anything, either, in the long run; people will get to look at you as they do at a down-and-out



TOMMY STARTED AS HE HEARD "YES, MR. SMITH," AND A DELIVERY DATE

your proposition, don't sell him at all. If you've got to beg, get a job with a charity organization and get into the legitimate begging business. Salesmen aren't beggars and beggars aren't salesmen."

#### Tactics That Lessen Self Respect.

Tommy felt uncomfortable, but he knew it wouldn't last long, and, also, he was well aware that if he listened for a few minutes he would be a better salesman when he got through.

"Isn't this a legitimate way to push a sale over?" he said.

"Many people think that it is," replied Reilly, "but I never could nerve myself to do it. I would lose my self respect. I want to be a salesman and when I can't sell through my own ability and on the merits of the car I believe that is one of the sales I am destined not to make. Whatever I do I won't ask a man to buy a car as a favor to me. I would just as soon ask him to give me money to buy bread or shoes for my

preacher who sells books because he can't do anything else, and who makes his straightened circumstances one of his selling points—"

"My stock's going down," interjected

"It'll come up again," smiled Reilly.
"This is only a temporary bear movement.

"Friendship which is employed for so mercenary a purpose isn't friendship, and no true friend would attempt such a thing; I don't see how a man can retain his self-respect and work on that system. Neither can I understand how a man can respect a salesman who endeavors to get business on that basis; furthermore, I don't believe such salesmen are very highly respected.

"The salesman of ability—the real type of salesman—is a business man who has something to sell, something that is worth every cent he asks for it and which is bountifully endowed with reasons why it is worth the money; the salesman stands up and talks like a business man

"The begging salesman will almost kiss a man's boot or lick his hand to get an order, no matter how small; he fawns on the prospect and conveys the impression that the buyer is doing the salesman a great favor if he buys. The facts are, if the goods are worth anything at all and are worth the attention of a sales-

and makes or loses the sale on merit.

man, the buyer is doing no one a favor by buying. Of course, a salesman does well to thank a man for an order, but that is different from begging for the order.

"Young Hughie Queens, who is staggering along with that Inland Motorist, begged pretty hard after he opened up; he got the idea of that local trade paper from some of the dealers here in town and then after he started his proposition was, 'Well, you said you'd help me if I started. I've started, now come across with your help.' Old Bastian is the king sale beggar of this town; his hard luck is one of his selling points.

#### Appeals That Fail of Their Object.

"That lad from the Times who solicits classified advertising is a beggar that I hate to see come in. He always asks, 'Have you got some classified you can give me this week?' or 'Can you help me out this week?' and his appeal is wrong from the start. If he said, 'What have you that needs advertising this week?' or something like that, it would sound differently. He also offers to trade publicity for classified advertising, and that disgusts me! He—"

Reilly turned to answer the telephone. He listened and talked with a more or less mystified look on his five. Tommy started as he heard, "Yes Mr. Smith," and some other stuff, and heard Reilly promise a delivery date.

"Smith says you're some salesman." said Reilly, as he hung up the receiver. "He does!" Tommy beamed.

"He says you're sure to be a winner and that he's going to take a car."

"He is!" Tommy was standing right up straight.

"I thought you said you begged that order; I thought you said he was buying because he was a friend of yours," said Reilly.

"Why, I didn't say that!" replied Tommy. "I tried hard enough, but I said I thought his knowing me might have something to do with it."

"H——!" exclaimed Reilly. "You got me all worked up over nothing at all!" and he turned back to his mail.

The chuckle was almost audible as Tommy started rustling the pages of his favorite trade paper.

### SURVIVAL OF FITTEST IN THE DEALERS' DOMAIN

# Dealer Who Will Remain is the One Who Makes of Himself a Merchandizer, Says Fosdick—Man Who Has Viewed Things from Salesroom and Factory Discusses Future of Retailing.

The first storekeeper was a supplyer of needs, but he was not a merchandiser. This primitive man, who set up in business because he found that people needed certain things, sold people what they asked for. That they might buy things they didn't need or might be made to realize needs of which they hitherto had not been aware, did not occur to him.

He had no need of salesmanship, according to his method of doing business; when Old Griffin rode 15 miles over the hills to buy 20 pounds of sugar and a few other things, the storekeeper sold the backwoods horseman what he called for and that ended the transaction. He merely supplied demands.

#### Dealer is Becoming a Merchandizer.

Taking general storekeeping in its primitive form and following it down to its present day aspect, the development of merchandizing is only too apparent, which is what Harry Fosdick, who now sells Hupmobiles in Boston, says is happening to the automobile dealer. The dealer, he says, is becoming a merchandizer and the dealer who doesn't become a merchandizer and a real salesman will find that his most pressing occupation will be finding out how to pay the rent.

Fosdick ought to know. He has been a part of the automobile industry for 14 years, and he has touched the trade in a variety of ways, the number of which is not the fortune of the average tradesman, be he dealer, salesman, sales manager or manufacturer. Fosdisk is a dealer now, or rather a distributer, handling the output of the Hupp Motor Car Co., of Detroit, in a large portion of New England, and from this viewpoint he knows of the ways and trials of the retailer through first-hand channels.

#### Touched Trade in Varied Points.

Many years ago he was manager of a branch for the Winton Motor Car Co., and in this capacity gained experience in that semi-dealer semi-manufacturer trade classification. Later he sold imported cars in New York, then he was in the sales department of the Stevens-Duryea Co., of Chicopee Falls, Mass., and his last

direct connection with a factory organization was as assistant sales manager of the Hupp Motor Car Co. in Detroit itself. Having been up and down the ladder between the factory and the retailer, he is well qualified to discuss trade problems.

It was in talking with a Motor World man that Fosdick made the statement that the dealer of the future will be a



HARRY FOSDICK

merchant and that the old-time dealer who cannot fit himself into the new order of things will be swept off the boards; in other words—it is becoming more so every day—cars are being sold, not bought.

#### Old-Time Dealer Must Give Way.

Fosdick had in mind the automobile dealer of the early days when nobody knew much about the car, not even the dealer, and customers bought a car because it had four wheels and ran without a horse; the merits of the case were a more or less unknown quantity and many a dealer ran his business at a profit because no one knew enough to know whether the dealer's charges were right or wrong.

"But now," said Fosdick, "the dealer has got to be a merchandizer and sell the goods; people aren't going to walk in and buy them unsolicited. You may hear about cars being 'sold over the counter' like shirts in a men's furnishing store, but I don't take much stock in it. The dealer who is going to win out is the one who is a salesman and a business man—a real, live merchandizer. It may be hard for some of those dealers who grew up in the old atmosphere and became accustomed to seeing their cars sold without effort, but they must become merchandizers if they wish to continue.

#### Even Newer Entrants Must Alter.

"But this becoming a merchandizer does not apply solely to the dealer who has been in the business for 10 or 12 years; it is equally applicable to some of the more modern retailing concerns. What it does mean is that dealers are going to become better merchandizers as a class. Regardless of how good they are now, they are going to be better and those who become the best will be the ones to head the list of the successful.

"It is a fallacy to think that any one car can be sold without salesmanship; there is no car which has not some feature to which a buyer is likely to take exception. There may be buyers who find their ideal in your car, but as a general rule they will find a few things which they hold up as reasons why they should buy some other make.

"Take any of the several cars, for example; regardless of how good a car it is, regardless of what it will do, the price, the quality and everything else, the prospective buyer may say it is hung too low.

#### Every Car Has Some "Objection."

"Dealers have cried against high-built cars and the safety in low construction is admitted by men who know, yet the prospective buyer may have the notion in his head that the car is too low and that he doesn't like it. It then devolves upon the dealer to sell the buyer on that point and it requires salesmanship to do it. The dealer who expects the buyer is going to take the car without being 'sold' has made a bad estimate.

"Take another car; the buyer may say there is not so much room in the tonneau as there is in the A—— car. The buyer may tell the A—— dealer that he likes the left steer and center control of the B—— car better; the B—— dealer may have to meet an objection to the wood wheels on his car and the C—— dealer may be up against a motor construction argument. But go all along the line and every dealer has some argument which he must be prepared to meet with promptness and effectiveness; it may be price or almost anything else, but every dealer has his big stumbling block—and doubtless he always will

#### Best Salesman Must Know Line.

"To sell cars at his best the dealer or salesman must know his line. Examples of this and the contrary are found in abundance at the automobile shows" -Fosdick was at the New York show at the time. "See that salesman over there! Whenever anyone asks him about the car he says, 'Yes, that's the motorblock-cast.' 'Yes, we have left steer and center control,' and so on. He has just enough intelligence to answer superficial questions, but to take the questioner and lead him-or her-through a talk on the car that will convert the questioner into a listener and leave him with a better opinion of the car than he had before is beyond this type of salesman.

#### Talking About Car Intelligently.

"See that other salesman"—Fosdick pointed to a clean-cut type of man who was surrounded by a little knot of people—"when people leave that man they know something; he knows what he's talking about; he can tell them anything they want to know about the car, and even if he doesn't make a sale while at the show he has done an amount of educational work that is almost certain to prove of value at some time or other.

"Watch that man over in that other exhibit: he's another who knows what he's talking about, and there isn't anything about the car that he can't talk about; he can sell a car on looks alone, if that is sufficient, but he also can delve down into the mechanical end of it if he has to, and when he does so he can talk intelligently to the prospect.

#### Must be Merchandizer to Rise.

"Do I believe a salesman can work best if he doesn't know too much about the mechanical end of a car? No, I do not! A good salesman always knows his line, and the man who knows only the looks and the superficial mechanical points of a car doesn't know his line; that's what ails so many of the average salesmen and dealers. Take these fellows who 'just get by.' How many of them do you sup-

pose will get very high up if they don't improve themselves? They must be merchandizers if they would rise."

Aside from the fact that the dealer has partially undergone and is undergoing this change toward the merchandizer, Fosdick stated that the relations between the dealer and the manufacturer also are changing and will change. When the business was younger and there was an overwhelming demand for cars, the manufacturer had no trouble in getting rid of his product. Then it was the dealer who had to worry; the manufacturer had no trouble getting rid of his cars and most of them didn't worry about whether they had any more dealers. The manufacturer then was in a position to dictate terms

#### Dealer Factor of More Importance.

But now affairs have changed and are changing; the dealer is recognized as a factor of more importance and can demand and command more consideration, Fosdick stated, and is likely to command more of it as the industry progresses.

"It may be far away," said Fosdick, "but some day I expect the dealer will do business just as the carriage dealers used to do-or maybe as they are doing now. They would go to the carriage maker, look over the line of vehicles, pick out an order and say, 'Send me these.' When they were about all sold out the dealer would go up to the factory and buy another shipment. He bought them as he wanted them and restocked when his necessities so required. When that day comes the industry will be entirely away from season models, and there will be no yearly selling contracts."

#### Advises Being Alert for Ideas.

In making himself a better merchandizer Fosdick expressed his belief that the man who is alert for ideas which will help him in his business is well on the way to the goal he seeks; Motor World—as its readers know—endeavors to garner the ideas and business methods of the trade and give the dealer a knowledge of what others have done. It is probable, however, that no one idea appeals the same to every tradesman, and in this connection Fosdick's statement may be interesting.

"Do you remember that story 'Reilly Has a Little Interview with Reilly'?" he asked. "That's one of a few things that I keep in a drawer in my desk and take out and read every now and then." It was printed December 12, 1912, and told how a man might ascertain ways in which to better himself or his business

if he would temporarily assume the role of an entirely separate person and take a good look at himself to see how others might view him.

#### Receiver Seizes American Dealer's Car.

Victor Vernon, who is—or was—the American dealer in Syracuse, N. Y., at present has the bad end of a peculiar argument; he is trying to force the receiver of the American Motors Co. to surrender a car which was Vernon's property before the American company's failure.

Vernon loaned the car several weeks ago to a representative of the American Motors Co. who wished to make some experiments at the factory of the Brown-Lipe Gear Co., in Syracuse; after the experiments were concluded the car was shipped to the factory for some repairs, the representation being, so Vernon states, that the car would be out of his hands but a few days at the most.

But when the car was about to be shipped back to Syracuse the American company failed and Frank E. Smith, the receiver, seized the car and refuses to give it up; Vernon, therefore, has sued Smith and the D., L. & W. Railroad for the car or \$1,500.

#### Westinghouse's Two-in-One Souvenir.

The term "acceptable" is one that is applicable, in its fullest sense, to the souvenirs that are being distributed by the Westinghouse Electrical & Mfg. Co., of East Pittsburgh, Pa. The souvenir consists of a 36-inch steel tape-measure in a nickeled case of vest pocket size, and with a spring winding device that makes "cranking" unnecessary; the tape is held, when drawn out by a ratchet, and pressure on a little button releases the pawl and the steel ribbon automatically winds back. There is a nickeled ball at the end of the tape, which makes it extremely useful as a gasolene gauge, the weight dropping to the bottom of the tank and the height of the fuel level showing on the steel tape.

#### Poertner to Direct Dealers' Contests.

John C. Wetmore, its founder, declining further honors, W. C. Poertner, the National dealer, was elected president of the New York Motor Dealers' Contest Association at its annual meeting last week. The other officers chosen are as follows: Emanuel Lascaris, first vice-president; E. C. J. McShane, second vice-president; Edward F. Korbel, secretary (reelected); James C. Nichols, treasurer (reelected). James M. Carples and Chas. S. Wells were added to the board of directors.

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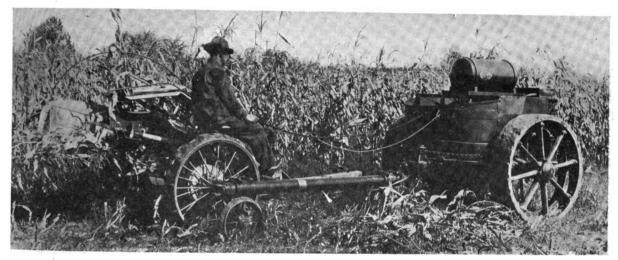
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### REPLACING FARM HORSES BY HORSEPOWER

Gasolene Implements That Take Hard Work Out of Farming and Solve the Hired Man Problem—Two-, Three- and Four-Wheeled Machines, Most of Them Operatable by One Person.



CUTTING CORN WITH A DETROIT TRACTOR WHICH, LIKE HORSES, IS CONTROLLED BY REINS

Farmer John Brunt, the two grays and the plow came to a stop at the end of the furrow, and man and beast paused for a breathing and cooling spell before starting back on another bee-line.

Resting on his plow handles, the tiller of the soil looked down the hillside and over the still unplowed acres, and wondered, for the 20th time that morning, how he ever was going to get through without neglecting his other work. No men to be hired; two horses lame in the barn and no others to be had at the time, for all the other farmers needed their animals for the same sort of work. He was worried.

"By heck!" swore Farmer John Brunt.
"If ever I get caught like that agin', swat
me for a horse-fly!"

#### Little Machine That's Handy.

But between the swearing of a great oath and the fulfilment thereof lies a vast abyss, into which Brunt plunged and in which he floundered. Which is to say that he didn't know what to do.

Finally Farmer Brunt took to wondering if, after all, there might not be something in these automobile machines.

"How do I know they're no good?" he demanded of himself. "Mebbe, now, they're all right, and I'm just fooling myself and keeping in the dark. I'm going to get busy and look into it!"

The first machine to catch the farmer's eye was attractive largely because it was so much like the plow with which he and his father and his grandfather had become so familiar—so painfully familiar! It was the Parker plow, manufactured by the Parker Motor Plow Co., of Bedford, Va. And surely there is much in the Parker machine to appeal to the farmer.

#### The Motor That Drives the Plow.

Taking a hasty look at it, there appears to be little more than a plow with a little air-cooled gasolene motor mounted between the handles and, at the front, a pair of wheels with broad, flat pads radiating from the rim to prevent slipping in the soil. The operator holds the handles and walks along behind, regulating the speed of the machine to suit his own pace, and this is a simple matter, as all the controls are brought back to the handles, so that they can be operated with the fingers without letting go. The whole machine weighs only about 400 pounds, and owing to the balancing of the weights the operator has only about 65 pounds to lift when turning corners or shifting the machine around.

The motor is of simple construction, with two cylinders set at an angle to each other—V-shaped, in other words—and it is air-cooled. It is a type of engine that has been well tried out in hard service,

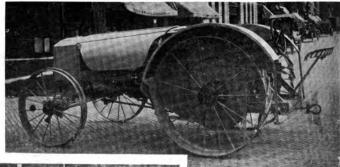
and is capable of standing up under real work. Its rated output of 9 horsepower is ample for the work; in fact, under ordinary conditions the power required is less than half of this amount, leaving a considerable margin in reserve. Ignition is by Bosch high-tension magneto. The power of the motor is transmitted to the two traction wheels-which, by the way, are but 12 inches apart-by shaft with universal joints, so that there is no danger of binding in the bearings. The gearcase is located between the wheels and provides two speeds, one for plowing and the other for road use, when the speed can be increased to advantage.

#### For Working in the Orchard.

When plowing there seems to be nothing that can be done with horses that cannot be done with the machine, so far as handling is concerned. If a stone or other immovable obstacle is encountered the machine does not tug and strain, but simply slips, and the operator merely throws out his clutch, throws in the reverse, backs away from the obstruction, goes over or around it and proceeds with the business in hand. It will haul one two-horse implement or two one-horse implements without difficulty.

In orchard work, where it is necessary to get under and around trees without barking them or injuring the roots, the little machine is extremely useful, its low build and the facility with which it may be handled making possible the best kind of orchard cultivation. Further, there is a spraying attachment, operated by the motor, which will spray two rows of trees at a time and do a vast amount of work in a comparatively short time.

A truck attachment is one of the "accessories" of the Parker plow, consisting of a two-wheeled trailer arrangement on which the plowshares and other implements can be carried to and from the



HOLMES LIGHT-WEIGHT TRACTOR WITH SWIVELED FRONT AXLE

rather sensational at first, when it is looked into a little it appears downright practical. Farmer John Brunt liked the idea of rein control immensely. The machine is the Detroit tractor, built by the Detroit Tractor Co., of 807 Scotten

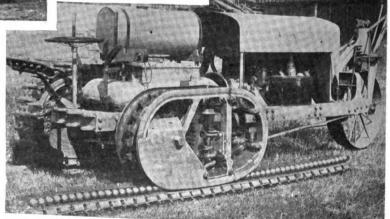


PARKER MACHINE WITH CULTIVATOR ATTACHMENT IN POSITION

field, and the operator himself can, of course, ride to and from work, resting his muscles the while. The makers state that, used as a tractor on the road, the little machine will haul 1,100 pounds up a grade of 6 per cent. with the engine running much below its normal power. Disk harrow and cultivator attachments also are fitted. With the various attachments that can be used, the machine will take care of the whole work of the field, from breaking the ground right through to cultivating the crop and hauling it to market.

#### Does the Work of One Horse.

The Universal plow is something like the Parker in at least one respect. It is a one-man machine and the operator walks behind holding the handles. Just there, however, the resemblance stops. The Universal, which is manufactured by the Universal Tractor Co., of New Castle, Ind., has two high wheels in front with a single-cylinder motor and the transmision mechanism mounted over the axle. The motor is of five horsepower, sufficient to do the work of one horse, which is the designed scope of the machine. There is this difference, however. The gasolene motor will do all it is able to do and keep on doing it without getting in the least tiredwhich is more than anyone can say for a horse. The handling of the machine is made easy by the fact that the weight



BALL-TREAD TRACTOR, SHOWING ONE TREAD STRAIGHTENED OUT

of the motor and other parts and the pull of the plow balance each other nicely. leaving but little strain for the driver's muscles.

A feature of the Universal tractor is that the tread of the wheels can be varied to suit the work in hand from a minimum of 23 inches to a maximum of 42 inches—an obvious advantage under various conditions, especially in cultivating. Of course, the engine can be used to drive the usual machines on a farm, as long as they do not require more than the 5 horsepower the motor is capable of developing.

Before getting too far away from the horses that gave John Brunt so much worry, it may be well to refer to a machine that is unique in that it is a motor tractor driven with reins, just as a horse is driven. And though the thing sounds

avenue, Detroit, Mich. So far as its functions are concerned, it is a big mechanical horse, though it is anything but horsey in appearance. The motor and transmission are mounted on a pair of heavy steel wheels, while a long reach, extending backward, is attached to whatever the "horse" is to pull. A pair of conventional reins leads back to the driver, who sits on the trailing implement or wagon, and there also is a third line at his feet.

#### Gas Tractor With Rein Control.

The two reins held by the driver are for exactly the same purpose as the reins used in driving a horse, and are handled in the same way. Pulling one rein steers the machine to one side. Pulling both reins stops it—and it doesn't sound so all-fired foolish if a man forgets and yells

"Whoa!" when he does it. The steering is operated by friction drive mechanism operated from the motor itself, so that all that is needed is a light pull on the rein. When both reins are pulled the main clutch is thrown out; incidentally, it is a big, healthy, leather-faced cone 16 inches in diameter. The third rein is for gear-shifting and operating the reverse, and



THE PARKER ON THE ROAD; TAKING THE PLOW TO THE FIELD

made up of interlocked steel plates. This belt forms the tread, which rests on the

DOING THE FALL PLOWING WITH A 9-HORSEPOWER GASOLENE TRACTOR

for use where the hills are particularly bad a fourth is provided, which is connected with the brake.

#### Better Than Four-Horse Team.

The tractor is hitched up to anything that needs pulling, whether it is a road vehicle or a field machine. The driver can sit on the vehicle or the implement and drive, or he can walk alongside with the reins in his hands, just as he pleases. Apart from the rein controls, the machine takes care of itself and requires no attention while at work. Its 20-30 horsepower four-cylinder Continental engine drives through a double reduction of cut steel spur gears and has sufficient power to do anything that can be done by four heavy horses working together. The reach which extends backward and to which plows, harrows and other implements, and wagons, are attached, is a steel tube 5 inches in diameter. Where the implement is of such a character that it cannot support the rear end of the tube, a little two-wheeled truck can be attached and the implement hitched on behind in any convenient way. The speed of the machine, which may be varied from 21/2 to 4 miles an hour, is under the control of a governor, so that a steady pace is maintained at all times and there is no racing of the engine when the clutch is thrown out.



PARKER PLOW LEFT IN THE FURROW AT DINNER-TIME

Among gasolene tractors that are bigger there is, in addition to the Detroit, the ball-tread tractor built by the Yuba Construction Co., of 433 California street, San Francisco, Cal. It needed a little study to make plain its particular features of advantage, but once understood, they "stuck out like a sore thumb," said Farmer John.

Broadly speaking, the ball-tread tractor is a three-wheeled machine with drive through the two rear wheels from a four-cylinder motor set up forward. Strictly speaking, however, it isn't quite right to refer to the "rear wheels," for they aren't exactly wheels. On each side, where the wheel ought to be, there is a cast steel framework of oval shape, grooved all the way round. In the groove there runs a sort of endless belt

ground, and power for the propulsion of the tractor is applied to it by a big sprocket journaled in the oval steel framework at the rear end, so that the teeth engage with a corresponding set of teeth in the belt on the inside. The teeth are at the center of the belt, and on each side are two rows of big steel balls which run in grooves in the steel frame and make the easiest-running kind of a bearing, prevent binding and friction and, incidentally, give the machine its name-ball-tread. The whole arrangement is made quite plain by the accompanying illustration, which shows one of the treads disconnected and straight ened out, the rows of balls, the sprocket and the chain teeth.

Of course, the principal advantage of the chain tread, which is by no means a new idea, is that it affords a broad bearing surface on the ground, and prevents the sinking in of the machine and the packing of the soft soil. With the ball-bearing feature, which is peculiar to the Yuba machine, there is no chance of any binding or hard running of the tread, no matter what may be the shape or condition of the ground, and the makers state that even if earth works in on the balls it cannot possibly do any harm.

#### Weight and Area of Contact.

As for the rest of the machine, it consists of a steel framework upon which is mounted a four-cylinder motor, the power of the engine varying with the size of the tractor from 25 to 55 horse-power. The two-speed change-speed gearset runs in an oil bath and is made up of hardened steel gears, the shafts running on roller bearings. The drive is transmitted to the rear axle, and thence to the sprockets at the ends of the axles, which, as already has been explained, drive the ball-bearing tread.

The actual weight of a tractor means little, so far as its work in the field is concerned. What really counts is the pressure on the ground—the pressure that tends to pack the soil. With the broad bearing surfaces of the Yuba tractors there is a very light pressure per square inch. In the case of the biggest machine, for instance, which has a motor of 55 horsepower, will do the work of about 18 horses and weighs 8,000 pounds. the pressure on the ground is but 4.3 pounds per square inch.

As for handling in close quarters, it's more or less of a cinch, for in two of the four models built it is possible to reverse the drive on one side while going ahead with the other, so that the machine will turn almost in its own length. The ball-bearing treads figure largely in permitting this kind of maneuvering.

#### Simplicity of Construction.

There was one feature in particular about the Holmes tractor, made by the Holmes Mfg. Co., of Port Clinton, O., that appealed very strongly to Farmer Brunt. The motor, having but two cylinders, is extremely simple. And he noticed, further, that the front axle is so mounted that one wheel can be hoisted away up on a stone or mound without in the least interfering with the stability of the machine or twisting its frame. The Holmes tractor has a 12-horsepower motor of the horizontal opposed cylinder type mounted with its shaft crosswise of the machine, and drives, through a twospeed planetary gear enclosed in a dustproof housing, to the rear axle. The rear

wheels are of large diameter and of light construction, while the front wheels, also of steel, are much smaller and are mounted on steering pivots of the automobile type. The seat for the operator is mounted low down behind the hood which covers the motor, so that he is well positioned for orchard work, for which the tractor is particularly well suited. The rear end is mounted on springs, so that much of the jarring is absorbed.

The motor is capable of doing any work that four horses can tackle successfully, and it will turn in a 24-foot circle.

#### Mayo Spark Plug Pump Improved.

Even in its earlier and cruder forms the spark-plug pump, so-called, was a mighty convenient bit of apparatus, when



SIMPLICITY OF APPLYING MAYO SPARK
PLUG PUMP

compared with the good—more or less—old-fashioned muscular method of injecting atmosphere into tires. By way of making a good thing better, however, the Mayo Mfg. Co., of 60 East 18th street, Chicago, Ill., has made improvements in its later models of spark plug pumps that are not a little striking. Or, more properly speaking, improvements have been made in the method of attaching the pump to the engine cylinder.

Of course, the Mayo pump can be put in place of the spark plug in the ordinary way, if so desired. But there is a still simpler method: An adapter is supplied, and into this both the plug and the pump can be locked-not at the same time, of course. The adapter consists of a socket that screws into the spark plug hole and is a fixture, and which has in its upper part a lock-nut with a little permanent handle. There are vertical slots in the inside or bore of the lock-nut. and into these slide projections on the pump and on the plug. When the projections drop through the nut they enter a space under the lower edge of the nut.

The plug, or pump, as the case may be, can then be turned, and is given quarter of a turn to the right, while the handle of the lock-nut is given quarter of a turn to the left. This locks the plug or pump firmly in position without a lot of turning and screwing and without the use of a tool. Removal is effected by reversing the process.

If for any reason it is not desired to use the spark plug, the adapter can be installed in a valve cap or elsewhere and the hole filled with a dummy when the pump is not required. The quick-detachable spark plug and the adapter are not parts of the regular pump equipment, but are supplied separately. The pump costs \$10, including pressure gauge, the spark plug and adapter \$1.50 and the adapter and dummy \$1.

#### Harnessing the Firefly's Light.

Where scientific research is going to lead, or what queer developments it will be responsible for, it is, of course, inpossible to prognosticate. It would appear, however, that there is a possibility of extraordinary doings in the illuminating field, though the possibilities still are somewhat remote.

To come to the point, it would seem that savants are getting within measurable distance of finding out how to produce light in much the same way as do the fireflies and other luminous insects. The germs responsible for the emission of insect light have been isolated and, so to speak, tamed. At least, they have been cultivated and the best method of keeping them fat and healthy, in which condition they give off the most light, has been evolved. A practical lamp is said to have been made by Professor Molisch, of Prague, who impregnated gelatine with cultures of the "bugs" and used the gelatine, when the germs had arrived at the light-emitting stage, for the active element of his lamp. The lamp, with a good reflector, gave a light that made possible the reading of a newspaper and the taking of photographs.

Without doubt it is a far cry from the experimental lamp of the man of science to the headlight of an automobile; but the gap is no wider than other gaps that have been crossed, and the man who, knowing whereof he speaks, figures on the possibility of equipping automobiles with living lamps sometime in the future doubtless will be thought no crazier than the men who, a little more than ten years ago, talked hopefully about the conquest of the air and the practicability of traveling in heavier-than-air flying machines.

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#### MOTOR WORLD

### CAR MADE OF TIRES WINS GAZE OF PASSING THRONG

Manager of Firestone Branch in Texas Ingeniously Combines Goods from Stock — How He Did It and Result.

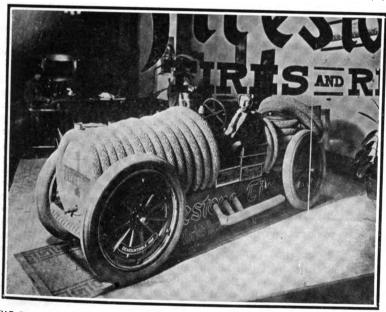
When other ideas do not develop as rapidly as desired, the tradesman who wishes to evolve something original and attention-compelling is generally able to "build an automobile"; this has been done many, many times, but the idea never seems to wear out, for no two men

and tube boxes formed the exhaust and connections; the seat was made of tube boxes and the steering wheel was part of the machine used for attaching carriage rubber tires. The front bumper was a detachable tread.

The driver in the accompanying illustration looks like a regular man, and maybe he is; if so, he evidently had a dummy relief driver. Taken altogether, it was "some" car and did credit to the designing engineer.

Was it Payment or Was it Not Payment?

The Auto Sales Co., of Charlotte, N. C., has "got the goat" of the State's Attorney General; he demands \$500 from



CAR BUILT OF TIRES AND ACCESSORIES IN FIRESTONE BRANCH SHOWROOM

go at it in the same way and the crowds of passers-by always stop to look.

Drawing on the stock of tires and accessories, the Houston (Tex.) branch of the Firestone Tire & Rubber Co. recently turned out an automobile that was realistic in the extreme; it looked so real that many of those who saw it standing on the salesroom floor wondered whether it would go. Thus far, however, the branch manager has been content to have it stand still.

To start with, he took four display wheels with demountable rims and began the construction of the chassis; having devised a chassis frame of ordinary boards the superstructure was added. The hood back to the dash was made of tires of different sizes and more tires were stacked behind the driver's racy seat to fill out the picture.

A sign and cement tin went to make up the radiator and cap, hook-on boots

the company as the State fee for selling automobiles and the company says it paid it. The company is telling the truth but the State has not the money, so the situation seems peculiar.

The company sent its fee to the State in the form of a check and was given its license; then, somebody lost the check and it cannot be found. The Attorney General demands a duplicate check but the company has refused to give it, wherefore the Attorney General has served a summons on the company.

#### Steel that is Beyond Purchase.

While there are numerous brands of steel in existence, to say nothing of maney that have passed out of existence, it is a safe wager that not a steel dealer in the country ever handled a piece of Wootz steel. The reason is that while Wootz steel was famous in its day, that day was about 1,500 B. C.

# CARS AND BOATS MIXED IN ANNUAL MILWAUKEE SHOW

Pleasure Vehicles and Commercials
Staged in Japanese Conservatory
—The Eighty-odd Exhibitors and Their Wares.

The Auditorium in Milwaukee (Wis.) holds a larger automobile show this week than it ever held before. After the Milwaukee Automobile Dealers' Association had made all the arrangements and seen all the exhibits finally in place, it threw open the doors on Saturday night, 10th inst., and until next Friday night, 17th inst., Milwaukeeans, and others, will have an excellent opportunity to view about every variety of wheeled vehicle that is entitled to the designation automobile.

In addition to pleasure cars, of which there are some 53 different brands, not counting seven makes of electrics, there are 16 makes of commercial vehicles and 26 accessory displays, to say nothing of a solitary bicycle exhibit, one motorcycle exhibit and two exhibits made by motor boat builders. All told, there are 80-odd exhibitors and they fill the main hall and also Juneau hall and Kilbourn hall to overflowing, the overflowing being the commercial car exhibits, which are placed in the basement along with the "put-put" boats.

What with a more than ordinarily liberal sprinkling of chrysanthemums, wistaria and other floral decorations, the main hall is changed into what is best described as a sort of Japanese conservatory, if there is such a thing. Anyway, there are Japanese lanterns galore and a big bamboo frame fairly studded with these tissue paper frailties of light helps out the illusion. Hanging vines and smilax and other greenery complete the decorations, not forgetting yards and yards of lavender bunting held up by gold and purple drapery. The complete list of exhibitors is as follows:

Pleasure cars: Frint Motor Sales Co., Chevrolet; Hoppe-Hatter Motor Car Co., Chalmers and Rauch & Lang electrics; Wollaeger Sales Co., Studebaker and Peerless; Imperial Auto Sales Co., Imperial and Krit; Hickman-Lawson-Diener Co., Ford; Hughes Motor Car Co., Apperson and National; Winton Motor Car Co., Winton; McDonald Motor Car Co., Lozier and Ohio; Hustis Bros., Stevens-Duryea, Premier and Chicago electrics; J. C. Coxe Co., Stanley steamer; Sanger Auto Co., Franklin; Buick Motor Co., Buick; Schreiber-Boorse Co., Locomobile and Hudson; Emil Estberg,

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Pope-Hartford and Woods electrics; White Automobile Co., White; American Automobile Co., Pierce-Arrow: Schillo Motor Sales Co., Mercer; Cole Motor Co., Cole; Mitchell Automobile Co., Mitchell and Detroiter; Creek Motor Sales Co., Oakland and King; Jesse A. Smith Automobile Co., Empire, Speedwell and Detroit electric; Regal Auto Sales Co., Regal; Cartercar Wisconsin Co., Cartercar; R. D. Rockstead, Paige-Detroit and Chandler; Baker Electric Agency, Baker electrics; Curtis Auto Co., Reo; Adams & Engs, Auburn; J. I. Case T. M. Co., Case; Jonas Automobile Co., Cadillac; Sherman Garage, Jackson; Reeke-Osmond Motor Car Co., Jeffery; Kisselkar Co., Kissel; Geo. W. Browne, Overland, Stutz and Garford; Haynes Automobile Co., Haynes; Packard Motor Car Co., Packard; Edward F. Sanger Co., Hupmobile, Abbott-Detroit, and Stearns-Knight; C. M. Thorning, Velie; A. H. Esbenshade, Waverley electric; Milwaukee Auto Sales Co., Maxwell; Cyclecar Sales Co., Imp cyclecar; Anger Engineering Co., A. E. C.

Commercial vehicles: Geo. W. Browne, Overland and Garford; McDonald Motor Car Co., Koehler; Chase Motor Truck Co., Chase; Kisselkar Co., Kissel; Theo. C. Hollnagel, Menominee; Buick Motor Co., Buick; Crown Commercial Car Co., Crown; Reeke-Osmond Motor Co., Jeffery; American Automobile Co., Pierce-Arrow; Stegeman Motor Car Co., Stegeman; Jesse A. Smith Automobile Co., Universal; White Automobile Co., White; Packard Motor Car Co., Packard; Sternberg Mfg. Co., Sternberg; Knox Automobile Co., Knox-Martin tractor.

#### Real Clubhouse for Tire Makers.

By way of providing its employes with a place where they can spend their spare time in amusements, eat their meals and so on, the Republic Rubber Co., of Youngstown, O., has built a clubhouse which is a model in its way. With a frontage of 130 feet, a depth of 60 feet and a height of three stories, the building contains all the essentials of a place of its kind. There are six bowling alleys, billiard tables, card rooms, a dining room where employes may eat their lunches and which will accommodate 1,200, all sorts of baths, reading and lounging rooms, kitchens, offices, steward's apartments, rooms for the company's fire-fighting force, and so on. The dining room will also be used for lectures, dances and other entertainments. Outside, adjoining the building, are football, baseball and tennis grounds.

The club is governed by its members

—the employes—who elect five governors, while the president of the company, T. L. Robinson, who is an ex-officio member of the board, appoints three. While all employes are given the privileges of the main floors, full membership os obtained on payment of \$1.

#### Firestone Improves a Tire Patch.

The little things are the things that count in running an automobile. That is to say, there are not many of the old-time serious troubles to be looked for, because they have been eliminated, for the most part, and all that are left are comparatively little ones. And one by one the makers are looking out for the little things; nothing seems too small to receive attention. For instance, there is



FIRESTONE "TABBED" PATCH

that seemingly insignificant detail—a tire patch. Many a patch has been spoiled in pulling off the glazed muslin that protects it before it is used; but somehow that sort of thing has been taken more or less as a matter of course—a thing that must be endured.

But the Firestone Tire & Rubber Co., of Akron, O., couldn't see it that way, and proceeded to make the improvement shown in the accompanying illustration. It consists simply in cutting the muslin lining with a little tab which projects beyond the edge of the patch and can be laid hold of and the lining stripped off in a twinkling, without fussing and picking and with a certainty that the patch won't be hurt in the process.

#### Bridgeport Dealers Stage Show.

For just one week, electric lights will blaze over new cars and new accessories and new decorations in the Armory in Bridgeport, Conn., for that is the specified duration of the annual automobile show promoted by the Bridgeport Dealers' Association. The show opened on Monday night, 12th inst., and will close on Saturday, 17th inst. All told, there are 24 exhibitors, of whom 18 show 27

different brands of pleasure cars, including three makes of trucks, and six show accessories. The exhibitors follow:

Cars: Case Motor Car Co., Maxwell; Cadillac Motor Car Co., Cadillac; B. A. Bukley Garage, Paige-Detroit, Lozier and Chandler; Peck & Lines Co., Krit and Haynes; William Hanford, Stanley steamer; Consolidated Motor Co., Velie pleasure and commercial and Selden commercial; American Cycle Car Co., Trumbull cyclecars; Blue Ribbon Garage, Pierce-Arrow and Packard pleasure and commercial; Ford garage, Reo, Stutz and Metz; Carl H. Page Co., Chalmers; H. M. Ford, Oakland; Stevens-Duryea and Hudson; Elm Auto Co., Mitchell, Cole and Studebaker; Oscar H. Banks, Moyer; Arthur L. Clark, Franklin and Buick; Starbuck & Matisse Garage, Ford; J. L. Carpenter, Federal commercial, Hupmobile and Baker electrics; W. H. McIntyre Co., Imp cyclecar.

Accessories: Hunter & Havens, Mobiloils; Welding Co., welding machines; L. M. Harris, miniature automobiles; Standard Signal Lamp Co., lamps; L. B. Silliman, Pyrene fire extinguishers; Stratford Auto Top Co., tops.

#### Illinois Dealers to Correct Abuses.

The dealers in Champaign and Urbana, two adjoining towns in Illinois, have recognized the trouble that lies in misunderstandings over repair work and in forming a trade association gave this item much consideration; it resulted in an agreement by the dealers to the effect that when a car owner take his car to a garage for repairs he must sign the repair order before the work is commenced and approve the work before it leaves the shop. Should a complaint be forthcoming it must be made within three days after the car leaves the shop.

The members have also decided upon a uniform discount on payments for materials and repairs; two per cent. will be allowed for repairs and materials and where credit is extended all bills will be payable on the 10th of the following month; when not paid by this date interest will be charged.

The name chosen by the tradesmen is Automobile Trades Association and the officers are: President, J. C. Thorpe, of Urbana; vice-president, Harry Herrick, of Champaign; secretary and treasurer, C. B. Wiggins, of Champaign; executive committee, the officers and E. L. O'Neill of Champaign, E. V. Kirby of Urbana and M. Cannon of Urbana. The committee in charge of printing and promotion consists of Herrick, O'Neill and Cannon. The association will join the State organization.

#### WRENCHES IN LIGHT OF REVENUE PRODUCERS

# Surprising Variety Disclosed by a Close Study of a Common Tool and Wherein Garageman, Dealer or Repair Man Can Profit by it—How Wrenches Should be Used and Their Various Purposes.

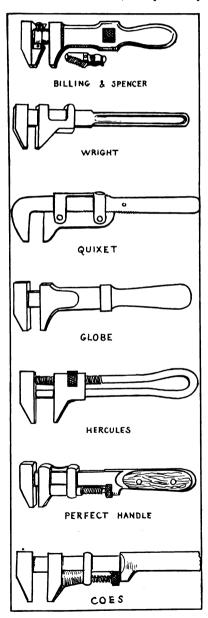
Can any one say just how many different kinds of wrenches there are—that is, wrenches that are useful about the garage and the repair shop and an absolute necessity to the car owner? Probably not even a real "live" dealer or garage proprietor or an up-to-date repair-shop owner could answer with any degree of accuracy; nor could either be expected to do so, for the name of wrench is legion.

It is quite probable, in fact, that no one knows the almost infinite number of different kinds of wrenches there areadjustable wrenches, that is, leaving solid end wrenches, spanners and socket wrenches aside for the nonce. The list is nothing short of astonishing. Yet it is a list that holds bright promise for the dealer or garageman with a finger on the pulse of the trade and an eye to the business that can be built up by the sale of such small, easily stocked, always-indemand devices that the car owner finds so necessary. There is an appeal in good tools, carefully finished and attractively displayed, that can be resisted by few persons with even the slightest leaning toward matters mechanical; and what car owner is there who does not, occasionally at least, take real pleasure in drawing up a nut or a bolt? Aside from the mere pleasure that the possession and the occasional use of such tools gives to the owner, their genuine usefulness-their actual necessity, in fact-cannot be gainsaid

#### Method That Sold Accessories.

Hence, the dealer or garage proprietor, or the repair-shop man, has two very good reasons for stocking a number of different styles of wrenches. And if they are well displayed-and in this respect. the average garage proprietor can take a leaf out of the hardware dealer's book with a great deal of profit—they will practically sell themselves. But they must be put before the owner's eyes. It will avail no one to have the most ingenious of ingenious wrenches neatly boxed and stowed on a shelf. The owner of the wrench is the only one who knows of its existence; the prospective purchaser may ask for a wrench, but the

chances are that he will not do so. But if it is placed in front of his eyes where he cannot fail to see it, it is practically



VARIETY IN MONKEY WRENCHES

certain to attract attention. Such goods always are their own best advertisement.

In this connection, the experience of a

wide awake garage proprietor in a fairly large city serves as an excellent example of what can be done to stimulate the sale of the accessories that the owner is more likely to purchase from the big supply store where half of the creed is to display goods so that they will sell themselves. This man invested in a showcase of the "silent salesman" type and he used it for a convenient counter over which to do business with his patrons. In the showcase he laid out the various accessories for which there is a practically constant demand. Over the top of the showcase he did his business; passed out the bills to those who dropped in to pay them; answered queries, etc. Hence, those who did business with him were literally compelled to take note of his stock; his wrenches and spark plugs and grease guns and what not could not escape the gaze of those who leaned over the showcase counter. What need to go further? He sold his accessories, or, rather, the accessories sold themselves. And his business acumen netted him a neat little profit that otherwise would have been lost.

#### Advantage of Variety in Stock.

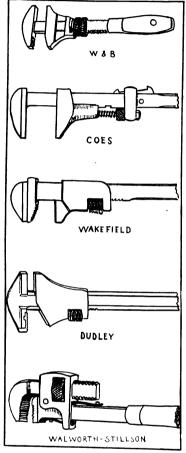
Almost anyone with a going garage business can follow in this merchant's footsteps and among the accessories that should find a place in the stock—and in the display—wrenches undoubtedly will find as ready a sale as will anything else, for, as already has been made plain, there is almost infinite variety from which to choose; and as human nature is much the same the world over, the one man's meat another's poison proverb can be made to read, where one wrench does not appeal another is likely to do so; the moral being, stock several kinds.

Special wrenches, of course, are designed for special purposes, but the wrenches that are here illustrated and described have been produced by their various makers to serve a variety of purposes—to be, in fact, general utility wrenches that can be put in any tool kit and that will pay for their upkeep because of their all-around usefulness.

The plain monkey wrench, with its adjustable jaw that will open wide for a



big nut and close tightly on the tiniest one, probably is the best known of the big tribe of wrenches, and it is made by such a long list of manufacturers that their names would fill a small book. Among those that make them, the D. Smith Co., of Plantsville, Conn., has a distinctive type in its "perfect handle" wrench that is illustrated herewith. Needless to point out, the wrench is made in a variety of sizes, from six to



COMBINED NUT AND PIPE WRENCHES

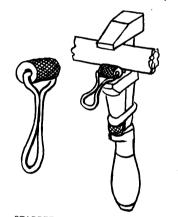
21 inches in length. The important part of the wrench, outside of its rugged construction—the bar, for instance, is a single drop forging and is said to be the only one of its kind—is the handle, which is of wood but is so shaped and fastened and protected that it cannot split or come loose. The wood part is locked in beneath the metal at both ends and is there to stay. Another distinctive feature is the yoke that joins the top and bottom strap of the sliding jaw and materially increases its strength; another is that it has an exceptionally long thread bearing in the jaw. These are the things that

should be pointed out to the prospective purchaser. It pays to know them and to know them well.

#### Usefulness of Bicycle Wrenches.

With the boom in the bicycle business there came an excellent opportunity for wrench makers, and the large number of "bicycle" wrenches that have survived make plain how well the opportunity was embraced. Obviously, these bicycle wrenches are quite as useful around an automobile as they are around a bicycle. In fact, their designation now stands for small size rather than to connect them with the bicycle industry. In fact, almost any small wrench now is styled a "bicycle" wrench and some of them are remarkably ingenious.

Take the Wakefield wrench that is pro-



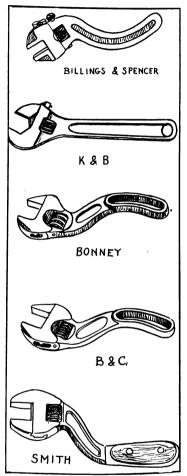
STARRET WRENCH CONVERTER

duced by Clarence E. Wakefield, of Worcester, Mass., for instance. It looks like a bicycle wrench and a few years ago might have been called one. Now, however, it is a wrench that any automobile owner would be proud to call his own. The construction of the wrench scarcely requires explanation, though it has a feature that one would scarcely look for; it is a quick-adjustable wrench. To close it upon a nut, the knurled screw is lifted out of its thread and the jaw pushed up with the fingers; when the adjustment is nearly correct the nut is placed back in its thread and the jaw is tightened by turning the nut part of a revolution. The same holds good when removing the wrench from the work. The extra, serrated jaw simply slides onto the bar and makes an ordinary wrench into a pipe wrench.

#### Device to Convert Nut Wrench.

The removable serrated jaw is also a feature of the Billings & Spencer wrench that is illustrated herewith. The Billings & Spencer Co., of Hartford, Conn., by

that makes wrenches in such variety that their delineation would require a book by itself. The one illustrated is one of many that is particularly suitable for the garage man's display case. It is small—two sizes are made, one six inches long and the other seven inches—and the operating mechanism is all enclosed in the handle. One of its distinctive features is that there is a graduated scale marked on



VERSATILE "S" WRENCH STYLES

the sliding portion, so that once the setting for some nut out of sight is obtained the wrench can be readily set again without the necessity for "feeling around" in the dark. The wrench is drop-forged from bar steel.

The Whitman & Barnes Mfg. Co., of Akron. O., is another concern that produces all sorts and kinds of wrenches, the one that is illustrated—the Hercules—being so plain in its construction and operation that it scarce requires explanation. The four parts are made of a high grade of steel and highly finished. Five sizes are made, ranging in length from

six to 15 inches. In another style, the two parts of the handle are securely twisted together.

The wrench that is produced by the Globe Wrench Co., of Ipswich, Mass., is what is styled a "one-hand" wrench, the designation making plain the reason for its adoption. As the picture shows, all of the operating parts of the wrench are fully enclosed within the handle; turning the handle moves the slidable jaw; hence, the wrench can be used with one hand and, as the fairly long handle affords a good grip and plenty of leverage, it is a simple matter to loosen the jaw, no matter how tightly it is clamped around a nut. The thread, by the way, is so made that the jaw cannot loosen itself, a valuable feature, for it materially lessens jaw wear by preventing partial turning of the jaws on the nut.

Any mention of wrenches is quite likely to bring to mind the name Coes, for Coes wrenches are known wherever wrenches are used. In fact, to Loring Coes is generally credited the invention of the screw wrench, his patent having been issued as long ago as 1843. Since then Coes wrenches have multiplied until at present the Coes Wrench Co., of Worcester, Mass., manufactures a line that is varied and extensive.

#### Adjustable Tools Without Threads.

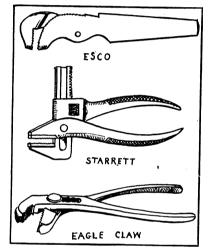
The Coes wrench that is illustrated herewith is a utility tool that has been developed for hard service. Suffice it to say that the bar is hardened steel cold swaged and both the jaws and the handle are semi-steel cast under a patented process. The handle, incidentally, is internally supported and cleverly reinforced. The screw is hardened steel and the knurled nut bears on a hardened and ground ball bearing inserted in the handle. In another style of Coes-the key model-the whole thread, together with the jaw, can be moved along the handle by moving the key which locks the jaw mechanism in place. This wrench, of course, is a little too large for ordinary automobile use, though it suggests its own usefulness around any garage, and particularly in a repair shop, where a great deal of heavy work is done.

Another style of monkey wrench that steadily is increasing in popularity is the type that has no screw thread though it still is adjustable, and very quickly adjustable, too. Among those who make them are the Wright Wrench & Forging Co., of Canton, O., and the S. & A. Mfg. Co., of Boston, Mass., both of whose products are illustrated herewith; they both operate on the same principle—a tiny set of serrations serving to hold the

slidable jaw firmly in place. Pressure at the back of the jaw serves to release the serrations, and the jaw then can be moved quickly and easily to fit any nut within the capacity of the wrench. The Quixet, as the S. & A. product is styled, is made in two sizes—five and eight inches—and the Wright comes in six sizes, varying in length from six to 18 inches. The Wright company also produces two sizes—eight and 10 inches—designed especially for automobile use. They have very thin heads, though otherwise they are like the others.

#### Advantages of the "S" Wrench.

The so-called "S" wrench, which looks enough like a capital "S" to warrant the



COMBINATION UTILITY TOOLS

designation, is a type that always has been popular with the motoring fraternity, for it can be used in so many places where an ordinary wrench probably would prove useless. A good "S" wrench, in fact, virtually takes the place of a set of solid end wrenches, especially for incorporation in the automobile kit.

A great many manufacturers produce wrenches of this type, and there is not a great deal of difference in them. The B & C and the Bonney, for instance, the former the product of the Bemis & Call Hardware & Tool Co., of Springfield, Mass., and the latter of the Bonney Vise & Tool Works, of Allentown, Pa., are pretty much alike in appearance, at least. Both have open metal handles, and in both the adjusting nut is large enough to afford an easy grip. The "perfect handle," produced by the H. D. Smith company, differs from them in its handle, which is like that employed in the same company's other "perfect handle" tools. The Billings & Spencer "S" wrench differs from them all in that the adjusting

screw is provided with a lock, so that the screw cannot be turned, or, what is more to the point, cannot turn itself. The K & B, which is made by the Kilborn & Bishop Co., of New Haven, Conn., does not quite belong in the same class as the sure-enough "S" wrenches, though it is much like them. It is styled a 22½ degree wrench, the jaws opening at an angle of 22½ degrees with the handle. The parts are all solid drop-forgings. All these wrenches, of course, are made in a variety of sizes.

Neither the Starret patent expansion pliers nor the Eagle Claw wrench, the former from the factory of the L. S. Starret Co., of Athol, Mass., and the latter from the plant of the Eagle Claw Wrench Co., of Chicago, Ill., can be properly styled wrenches, though both will do the work of wrenches and have been constructed with that purpose in view. The Starret tool is a little bit more than either wrench or pliers, for it can be adjusted to hold anything within its capacity regardless of whether the surfaces gripped are parallel to each other or are at an angle. In other words, the jaws can be adjusted to fit any piece, straight or tapering, up to 11/4 inches in diameter. Incidentally, because of the serrations on the jaws, the tool will hold round articles as well as it will hold square ones. The Eagle Claw wrench virtually makes itself plain; it will grip practically any nut or bolt and possesses the advantage that it may be used in places where no ordinary wrench would fit. There is no "lost motion" and the tool will grip even the head of a bolt with a firm hold.

#### Nut and Pipe Wrench Combined.

In the modern automobile tool kit, the Stillson wrench, or as it is more popularly known, the pipe wrench, finds an important place, and because a wrench of the kind is necessary at times and it is is not advisable to use one on ordinary nuts and bolts because of the marring effect of the jaws, the combined pipe and straight nut wrench is an exceedingly handy tool. A number of makers produce combined wrenches of the kind, among them being the Whitman & Barnes Mfg. Co. and the Dudly Tool Co., of Menominee, Mich. The products of these two companies, however, are quite different, as the accompanying pictures make plain. In the W. & B., for instance, the thread is formed around the bar, whereas in the Dudly it is formed only on the inner face. Similarly, though the W. & B. has a wooden handle, the Dudly is made all of

A tool of practically the same kind,

though adapted to a much wider range of uses, is produced by the Bonney Vise & Tool Works; it is a combination pipe and nut wrench and pipe cutter. The construction of the tool is shown quite clearly in the illustration. The 10-inch size is adjustable to pipe of from one-eighth to one inch in diameter, and the 15-inch size will hold or cut pipes of from ¼ inch to 1½ inches in diameter. An intermediate size also is made.

The Esco pipe wrench, which is made by the Erie Stamping & Mfg. Co., of Erie, Pa., is a pipe wrench pure and simple, though it is unlike anything else of its kind. It is made of pressed steel throughout and comes in four sizes from six to 14 inches in length. The Starret company produces, among other things, a useful little tool with which it is pos-

### MAKING AN OPEN CAR BODY

## A LIMOUSINE IN A MINUTE Lewkowicz's Body Can Be Applied

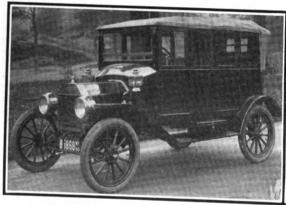
Lewkowicz's Body Can Be Applied to Any Car—Windows that do Not Have to be Removed— No Bolts or Pins.

The possibility of having a small car with a body easily convertible from wide open, for fine weather, to closed, for less cheerful conditions, is one that has appealed to many and that is only partly met by the usual arrangement of top, side curtains and windshield. Several large machines have been provided with bodies that could be converted into practically limousines, but smaller machines have

are required and that a woman can do the work without difficulty. No screws, bolts or pins are used in making the conversion. The cost of manufacturing the Lewkowicz body is said to be about 10 per cent. in excess of the cost of the standard type of body as used in the better known small machines.

#### Spring Story Told in New Way.

Some of the old-time advertising people positively would turn over in their graves if they could but see how advertising is being conducted, at least by some concerns, at the present day. Not only are they giving away real information, but it often is information that even the savants of a few years ago were unfamiliar with, and, further, the matter is made so readable that it is sometimes





LEWKOWICZ'S CONVERTIBLE BODY CLOSED

WITH TOP AND GLASS SIDES STOWED AWAY

sible to convert any ordinary wrench into a pipe wrench in about two shakes. It is nothing more or less than a tiny hardened steel roller, deeply and sharply knurled, and its method of application is shown by the picture.

The original pipe wrench, of course, is the Stillson, such, for instance, as is made by the Walworth Mfg. Co., of Boston, Mass., which company, by the way, has been making wrenches of the kind for upward of 40 years. The peculiarity of the Stillson lies in the fact that the movable jaw is not held tightly to the handle, as it is in other wrenches. Instead, there is a joint between the part that holds the adjusting screw and the handle and a flat spring holds the jaws in such a way that a light pressure backward releases them, permitting a ratchet movement. The wrench, of course, is essentially a pipe wrench and as produced by the Walworth company comes in a number of different styles and sizes suitable for either the automobile tool kit and the use of the garage or repairshop mechanic.

not been so well taken care of in this respect until recently. Now, however, the "smaller fellows" may be fitted with bodies that, with a very small expenditure of time and trouble, can be completely closed in with top and side windows, for all the world like a machine with a permanent enclosed body.

The accompanying illustrations show one of the bodies built according to the plans of the Convertible Automobile Body Corp., Longacre Building, Broadway and 42nd street, New York, and fitted to a Ford car. The inventor is Ladis Lewkowicz, an aviator, who has descended to earth long enough to do automobile owners this service. As may be seen, the top folds back in the usual way and is attached to the top of the windshield when extended. The side windows, which drop into pockets in the body sides when not in use, are drawn up and quickly fastened in place, and the enclosure is complete. The makers claim that one minute is time enough to convert the car from an open machine to a limousine, that no tools

hard to realize that it is intended for advertising at all. That is the way one feels when looking over the book issued by the Perfection Spring Co., of Cleveland, O., which makes a specialty of the finest springs for suspension purposes that can be made.

As a matter of fact, there is less in the book about Perfection springs than there is about scientific research of the kind that is made with microscope, micro-photography and other aids to investigation in the world that is out of unaided human sight. To be sure, it all leads up to the way in which scientific research made possible the kind of steel that is used to build the springs in question, but there is so much general scientific information and so much data concerning events of the past-as far back as 10,000 B. C., in fact-that the book is an unusual piece of work and well worth a perusal. It is a handy little volume of 82 pages, measuring 73/4 x 51/4, and is bound in stiff boards. The illustrations are numerous and pertinent and are truly

#### MOTOR WORLD

## "SAFETY FIRST" CAMPAIGN AIMS AT FEWER ACCIDENTS

New York Cities Instructing Public in Traffic Common Sense—
School Children Receive Special Attention—The Plan.

The "Safety First" idea attains more prominence daily as so-called "campaigns" are instituted in various localities, the object being to teach the public—children particularly—that a little care will aid greatly in lessening the number of accidents in the streets.

"Up State" in New York the idea has become almost an epidemic and, following Syracuse, Albany is now in the midst of its accident-preventing movement. In Syracuse the Boy Scouts aided by distributing "Safety First" cards to pedestrians at street crossings and in Albany much the same propaganda is being utilized. Some of the plans are:

Distribution of thousands of "Safety First" cards, giving traffic rules and showing by picture the right and wrong way to drive.

Advertisements in Albany newspapers to inform the public of the movement and repeat the correct and safe traffic rules.

Posters to appear on billboards throughout the city graphically illustrating the movement and emphasize the slogan, "Safety First."

Lectures before clubs and organizations of Albany to bring home to the individual the need for care in passing through the streets.

The Albany Automobile Club launched the campaign and the superintendent of schools and the street railway are cooperating. Not only are the children being instructed in traffic precautions, but car owners and drivers are receiving tutelage in the common sense and courtesy of motoring. For the car owner or driver suggestions are deemed sufficient, but for children the information is put up in question and answer form.

The traffic catechism which is to be given to the children through the schools follows:

What should you do before crossing a street?

I should stop and look both ways, first to the left (as danger will likely be nearer from that side) and then to the right. If the street is clear for at least half a block, then I can go ahead and cross the street quickly.

Where is the proper place for you or anyone to cross the street?

At a crossing, and I should never cross a street at any other point, for the reason that there is less danger at crossings.

When you are playing in the street, what should you always keep in mind?

That I have chosen the most dangerous place possible in which to play and that automobiles and other vehicles approach swiftly and silently and are liable to kill me if they strike me.

Why should you not play in a street frequently used by automobiles or other vehicles?

Because I am apt to be wilder the drivers, thus making them lose control of their vehicles, which would be dangerous, not only to me but also to others.

What would you do if you were standing in the middle of the street and should see automobiles or other vehicles coming both ways?

If I am caught in the middle of the street, with vehicles approaching from both directions, I should stand perfectly still and let the vehicles pass around me, because they are not likely to run over me if I do not move.

What danger is there in stealing a ride on an automobile or other vehicle?

I am in danger of falling off and being injured, or I may be run over by another vehicle when I jump off. This is a very dangerous practice and I should avoid it.

In case a child or anyone is injured by an automobile, what is the first thing to do?

I should secure assistance and get the injured one to the nearest hospital as quickly as possible.

Should you ever throw a stone at an automobile or other vehicle, and why?

I should never throw a stone or other missile at any vehicle because I might hurt someone or damage the vehicle, or cause the driver to lose control, which might result in an accident and for the reason that it is against the law.

Should you look after younger children in crossing streets, and why?

I should assist younger children in crossing the street because they cannot think as quickly as I can and may not realize the danger which threatens them.

What should you not do if you see an automobile or other vehicle unattended standing on the street?

I should not go near it.

Should you ever use roller skates, coasters or other similar contrivances on the streets?

Never, because they are always dangerous, particularly on the streets frequented by automobiles and other vehicles, for the reason that I cannot perfectly control my movements and, therefore, am liable to be injured or killed.

# UNITED STATES NOW USING MORE THAN 1,000,000 CARS

Number More than Doubled in Two Years—Empire State Still in Lead with 132,000—New York Official Gathers Data.

Since 1911 the number of automobiles in the United States has advanced from 522,939 to 1,127,940, an increase of 605,001, or 115 per cent., according to a compilation recently completed by Secretary of State Mitchell May of New York. Careful estimates in States where registration is by counties or municipalities places the number of cars in the hands of dealers at approximately 50,000, which leaves about 1,097,940 automobiles in daily use. This includes both pleasure and commercial vehicles.

New York State still leads, with 132,-579, and of this number the metropolitan territory, which includes Greater New York and adjacent sections, has 60,000. The registrations in New York State by horsepower were: Less than 25, 49,473; 25 to 35, 42,211; 35 to 50, 18,770; 50 and over, 1,360; this does not include the half-rate registrations after August 1.

Illinois has the honor of second place in the list with 95,582 cars, and Ohio ranks third with a total of 86,153; Nevada is last with 1,141. The comparisons of the registrations by States in 19122 and 1913 follows:

State.	1913.	1911.
Alabama	5,314	
Arizona	3,132	• • • •
Arkansas	5,132	
	5,100	1,500
		14,566
Colorado	13,297	
Connecticut	20,136	13,500
Delaware	2,145	1,228
District of Columbia	11,614	2,230
Florida	3,720	1,333
Georgia	12,919	5,700
Idaho	2,426	3,700
Illinois		::
Indiana	95,592	42,000
	61,177	12,000
	77,269	29,323
Kansas	12.937	
Kentucky	7,551	2,630
Louisiana	8,139	
Maine	11,112	2,678
Maryland	12,567	7,097
Massachusetts	57,197	36,975
Michigan	41,394	27,664
Minnesota	45,054	27,004
Mississippi		19,000
Missouri	2,217	.2111
Montana	39,541	18,225
	6,102	
Nebraska	34,943	7,766
Nevada	1,141	
New Hampshire	7,254	4,489
New Jersey	50,491°	48,266
New Mexico	1,972	,=00
New York	132,579	81,655
North Carolina	7,710	1,452
North Dakota	12,504	7,105
Ohio	86,153	7,185
Oregon	14,114	45,150
Pennsylvania		6,150
Rhode Island	79,846	43.074
Rhode Island	10,000	5,866
South Dakota	14,700	3.250
Tennessee	8,900	1.000
Texas	28,000	
Utah	3,400	442
Vermont	5,913	3.298
Virginia	9.023	3.909
Washington	21,000	8,000
West Virginia	5.007	2,041
Wisconsin	34,647	7.241
Wyoming	1.585	
	1,383	
Totals	127 040	522,939
	27,770	322.939

#### MOTOR WORLD



1,072,983. Wheel Hub. Edgar W. Perry, Georgetown, S. C. Filed Nov. 16, 1912. Serial No. 731,759. (Spring hub.) J claim.

1,073,062. Trunk Piston. Stephen Evans Alley, Glasgow, Scotland, and Robert McGregor, London, England. Filed May 13, 1913. Serial No. 767,430. (Two-diameter piston.) 1 claim.

1,073,073. Motor Vehicle. Russell Huff, Detroit, Mich., assignor to Packard Motor Car Co., Detroit, Mich., a corporation of Michigan. Filed Nov. 18, 1910. Serial No. 593,036. (Motor supporting system.) 7 claims.

1,073,086. Two-Cycle Gas Engine. Charles S. Blose, Palmerton, Pa. Filed Nov. 5, 1912. Serial No. 729,639. (Two-cycle motor with ported piston and cylinder air-port.) 1 claim.

1,073,092. Internal-Combustion Engine. Niels A. Christensen, Milwaukee, Wis. Filed May 18, 1910. Serial No. 651,939. (Transverse magneto-and pump-shaft with spiral gear drive.) 5 claims.

1.073,139. Starter for Explosive-Engines. Geo. Hartwell Kelley, Gainesville, Fla., assignor to The Kelley Self-Starter Co., Gainesville, Fla., a corporation of Florida. Filed Dec. 6, 1911. Serial No. 664,184. (Auxiliary spring shock absorber.) 9 claims.

1,073,168. Automobile Jack and Reversing-Stand. Henry C. Roberts, Murphysboro, Ill. Filed Sept. 17, 1912. Serial No. 720,053. (Jack to be placed under center of car and on which car can pivot.) 4 claims,

1,073,187. Shock-Absorber. Henry A. Tuttle, Taunton, Mass. Filed Oct. 2, 1912. Serial No. 723,459. (Auxiliary spring shock absorber.) 10 claims.

1,073,237. Lap-Robe for Automobiles, etc. Luzerne W. House, Gloversville, N. Y. Filed Jan. 11, 1913. Serial No. 742,549. (Lap-robe provided with pockets.) 1 claim.

1,073,265. Vehicle Running-Gear. Louis Mayer, Mankato, Minn. Filed May 5, 1910. Serial No. 559,543. (Four-wheel-drive system.) 2 claims.

1,073,329. Tire or Tube for Wheeled Vehicles. Owen T. Bugg, Hoboken, N. J. Filed Jan. 16, 131. Serial No. 742,331. (Cellular inner tube.) 2 claims.

1,073,330. Vehicle. Ludger E. Bushby, Newark, N. J. Filed MaMrch 25, 1913. Serial No. 756,670. (Helical spring suspension system.) 3 claims.

1,073,332. Device for Raising and Lowering Automobile Tops. Otis Cook, Talladega, Ala. Filed May 22, 1912. Serial No. 699,081. (Rod to support top while extending it.) 1 claim.

1,073,339. Vehicle-Coupling. Walter Forthmann, Potsdam, Germany. Filed March 28, 1911. Serial No. 617,461. (Automatic steering system for trailers.) 1 claim.

1.073,368. Spring Wheel. Edgar D. Smith, Elizabeth, N. J. Filed March 15, 1912. Serial No. 754,623. (Wheel with curved spring spokes.) 2 claims.

1,073,385. Safety Device for Automobiles. Otto Nathanial Applequist, Council Bluffs, 1a, Filed Dec. 2, 1912. Serial No. 734,561. (Safety device with rollers and trip.) 7 claims.

1,073,398. Automobile Hood. Hyman Cohen, Brooklyn, N. Y. Filed Feb. 4, 1911. Serial No. 606,476. (Top envelope.) 2 claims.

1,073,401. Shock-Absorber. Walter H. Cook, New Orleans, La. Filed March 6, 1913. Serial No. 752,438. (Shock absorber for transverse springs.) 8 claims.

1,073,439. Combined Vehicle Steering Gear and Controlling Mechanism. Frank B. Rae, Detroit, Mich., assignor, by mesne assignments, to Rae Electric Co., a corporation of Michigan. Filed

June 18, 1907. Serial No. 379,594. (Steering wheel and control mechanism adjustable as to angle.) 10 claims.

1,073,446. Anti-Skidding Device for Vehicle Wheels. William H. Snyder, Ashbourne, Pa., assignor of one-fourth to Louis C. Block, one-fourth to Forman Poole Hollinshead, and one-fourth to William Ross Walton, Elkins Park, Pa. Filed Oct. 28, 1912. Serial No. 728,172. (Link-and-lever fastening for tire grips.) 10 claims.

1,073,490. Two-Wheel Tractor. John I. Hoke, Frankfort, Ind. Filed March 24, 1910. Serial No. 551,365. (Two-wheeled motor tractor for attachment to agricultural implements.) 3 claims.

1,073,498. Elastic Wheel. Karl Koszegi, Baja, Austria-Hungary. Filed Dec. 28, 1910. Serial No. 599,645. (Wheel built up of flat springs between hub and rim.) 4 claims.

1,073,506. Demountable Rim. Arthur McPherson, Beaumont, Tex. iFled Nov. 25, 1912. Serial No. 733,486. (Quick detachable rim and fastenings.) 1 claim.

1,073,508. Shock-Absorbing Wheel for Vehicles. Charles Edward Moser, Boulogne-sur-Seine, France. Filed Dec. 30, 1910. Serial No. 600,132. (Wheel with cushioned hub.) 6 claims.

1,073,513. Motor Plow. Joseph Nicholas Parker, Bedford City, Va. Filed Oct. 18, 1911. Serial No. 655,270. (Worm-driven motor plow.) 4 claims.

1,073,529. Annular Ball-Bearing. John W. Schatz, Poughkeepsie, N. Y., assignor of one-third to Herman A. Schatz and one-third to Grover H. Schatz, Poughkeepsie, N. Y. Filed Sept. 7, 1912. Serial No. 719,044. (Self-contained ball bearing with outer supporting jacket.) 3 claims.

1,073,530. Ball-Bearing. John W. Schatz, Poughkeepsie, N. Y., assignor of one-third to Herman A. Schatz and one-third to Grover H. Schatz, Poughkeepsie, N. Y. Filed March 12, 1913. Serial No. 753,723. (Self-contained ball bearing with outer supporting jacket.) 6 claims.

1,073,553. Internal-Combustion Engine. Edward T. Young, Boston, Mass., assignor of one-half to Edward E. Badger, Hyde Park, Mass. Filed Dec. 13, 1906. Serial No. 374,617. (System for introducing fuel during pressure stroke.) 22 claims.

1,073,569. Automobile Transmission. Henry Ford, Detroit, Mich. Filed Aug. 12, 1909. Serial No. 512,503. (Ford transmission system.) 4 claims.

1,073,579. Radiator-Cell Section. Herbert Champion Harrison and Emil Carl Frederick Streichert, Lockport, N. Y. Filed Nov. 1, 1912. Serial No. 729,108. (Sheet metal radiator construction.) 2 claims.

1,073,601. Electric Battery. William S. Gould, New York, N. Y., assignor to Gould Storage Battery Co., a corporation of New York. Filed March 27, 1912. Serial No. 686,655. (System of plate assembly.) 1 claim.

1,073,633. Starting Valve-Gear for Internal-Combustion Motors. Jean Romeyn, Brussels, Helgium. Filed June 17, 1912. Serial No. 704,219. (Valve-lifter device.) 2 claims.

1,073,640. Internal Combustion Engine. Paul S. Smith, Newburgh, N. Y. Filed April 22, 1909. Serial No. 491,514. (Rotary sleeve valve.) 7 claims.

1.073,652. Internal-Combustion Engine. William James Wright, Franklin, Pa., assignor to Wright Engine Co., Pittsburgh, Pa., a corporation of Delaware. Filed March 5, 1912. Serial No. 681,789. (Compound internal combustion engine.) 19 claims.

1,073,656. Engine or Motor. John P. Barker, Orange, Cal., assignor, by mesne assignments, to Orange Auto Power Co., a corporation of California. Filed Nov. 6, 1911. Serial No. 658,829, (Two-cycle motor with gas space around lower part of cylinder.) 4 claims.

or Storage Batteries. Bruce 1 ord, Philadelphia, Pa. Filed Jan. 25, 1911. Serial No. 604,503.

(Lead-coated copper strap and attaching means.)
4 claims.

1,073,671. Combustion-Engine. Guido Fornaca, Turin, Italy. Filed Aug. 12, 1911. Serial No. 543,656. (Rotary overhead valve.) 5 claims.

1,073,676. Gasolene Tank. Leland F. Goodspeed, Milwaukee, Wis., assignor to Milwaukee Locomotive Mfg. Co., Milwaukee, Wis., a corporation of Wisconsin. Filed Feb. 17, 1912. Serial No. 678,321. (Tank valve and connections.) 8 claims.

1,073,770. Internal-Combustion Engine. Luther O. Martin, Parkersburg, W. Va. Filed Jan. 25, 1912. Serial No. 673,458. (Rotary overhead valve.) 2 claims.

1,073,796. Front Vehicle Suspension. Ramon Febres Cordero, Rubio, Venezuela. Filed July 25, 1911, Serial No. 640,473. Renewed Feb. 14, 1913. Serial No. 748,467. (Compressed air suspension system. 2 claims.

1,073,804. Vehicle Spring Equalizer. George M. Huston, New York, N. Y. Filed May 21, 1913. Serial No. 771,029. (Shackle on which ends of spring leaves are separately pivoted.) 4 claims.

1,073,840. Pneumatic Spring for Vehicles. To mas Luis de Bejar and Bernardo Lanzagorta, Habana, Cuba. Filed Jan. 30, 1912. Serial No. 674-345. (Air-cylinder suspension system.) 1 claim.

1,073,882. Valve-Operating Mechanism for Internal-Combustion Engines. Jessee M. White, Philadelphia, Pa. Filed June 25, 19912. Serial No. 705,685. (Valves operated by oscillating levers.) 7 claims.

1,073,971. Automobile Attachment. William J. Evans, Linnburg, Ia. Filed Sept. 20, 1912. Serial No. 721,431. (Means for driving steering road wheels.) 2 claims.

1,074,000. Oil Engine. Max Richard Matti, Falun, Sweden. Filed Sept. 14, 1910. Serial No. 581,975. (Governing system.) 6 claims.

1,074,024. Traffic and Rear-End Signal Lamp. Harry W. Sweeting, Auburn, N. Y. Filed Feb. 19, 1913. Serial No. 749,462. (Multiple-bulb signal lamp and connections.) 3 claims.

1,074,038. Lever-Lock. Oliver A. Benham, Dayton, Ohio. Filed Dec. 23, 1912. Serial No. 738,-130. (Means for locking gear-shifting lever.) 2 claims.

1,074,051. Air-Pump. Fritz K. Hohenstien and Charles G. Meyers, Richmond, Ind. Filed Dec. 11, 1912. Serial No. 736,187. (Double piston impulse pump.) 4 claims.

1,074,055. Multicylinder Internal-Combustion Engine. Hugo Lentz, Halensee, near Berlin, Germany. Filed Nov. 16, 1912. Serial No. 731,-668. (Air-jacketed motor with draught created by exhaust gas.) 4 claims.

1,074,064. Resilient Wheel. Joseph Pronovost and Hiram S. Miller, Helena, Mont. Filed March 25, 1913. Serial No. 756,775. (Wheel with radial springs.) 1 claim.

1,074,079. Automobile Tire Trunk. Abraham Zieve and Harry Davidovitz, New York, N. Y. Filed Dec. 12, 1910. Serial No. 596,887. (Cylindrical tire trunk.) 3 claims.

1,074,096. Liquid Change-Speed Gear for Automobiles. Ludwig Hammer, Vienna, Austria-Hungary. Filed June 26, 1913. Serial No. 775,911. (Hydraulic transmission system.) 30 claims.

1,074,163. Machine for Excavating, Elevating, and Dumping Earth, Sand, Silt, or Gravel. Westey Castles, Melbourne, Victoria, Australia. Filed June 26, 1912. Serial No. 705,985. (Bucket wheel with closable buckets, operated by motor.) 4 claims.

1,074,178. Vehicle-Spring. Lewis A. Huston, New York, N. Y. Filed July 28, 1913. Serial No. 781,582. (Elongated spring shackle.) 6 claims.

1.074,232. Hood of Motor-Cars. Anton Aumuller, Munich, Germany. Filed May 6, 1912. Serial No. 695,539. (Window holder for use in connection with collapsible hood.) 2 claims.

1,074,495. Controlling Mechanism. Ray Davis, Lehigh, Iowa. Filed Sept. 27, 1912. Serial No. 722,724. (Governing system.) 4 claims.



## "You don't have to raise the hood"

ATIONAL owners enjoy complete abandon of worry about mechanical parts of their cars. This confidence is found only in the perfected quality of National cars.

7E build whole cars-the name National guarantees them. Every National car is built as a every mechanical part operates harmoniously to produce satisfactory results. You leave the responsibility for the National mechanical construction to our years of experience-forget that there are gears and machinery operating beneath your soft cushions. You rest in comfort and give thought only to the ease and joy of motoring.

#### Brief Specifications... National Six

Brief Specifications...National Six

MOTOR—Six-cylinder, 3¾ x 5½ inch, cast en bloc. Tire pump, integral part of motor. Clutch, self-contained aluminum cone. Starting and lighting, electric two unit system. Transmission, sliding gear selective type, three speeds forward, one reverse. Gauge 56 inches. Oiling, crank case, constant level, force feed, with gear driven pump. Ignition, high tension, dual magneto with storage battery. Tires, 36 x 4½. Firestone demountable rims. Air pressure gasoline feed, generated by small pump in crank case. Capacity, 23 gallons. Automatic carburetor. Two sets of brakes on 16 inch rear wheel drums. Bevel gear drive through straight line shaft with universal joints and torsion member. Full floating rear axle. Left side drive. Access all four wide doors. Single lever in center controls all speeds. Half elliptic springs, front, special National construction, rear.

EQUIPMENT—Top complete with side curtains and boot, ventilating rain vision windshield, extra Firestone rim, electric lighting and starting systems 12-in. double bulb electric headilghts, electric license tail light, Warner speedometer, electric horn, tools and jack.

---SIX---

\$2375

National 40

HE National 40 is our staple car. Its years of marvelous success makes it stand out with silhoumakes it stand out with silhou-ette distinctiveness against the back-ground of all other cars. We believe this is the best all-round automobile ever made. We build on the series basis; every day begins a new year. We do not upset everything by rushing into yearly models with calendar seasons. We build on a constant sys-



You can buy over telephone

ATIONAL owners buy performance and not specifications—they can buy their new National's over the telephone.

We sell our experien ability, responsibility and our guarantee—not a mere job of assembled wheels, axles, gears and parts. That's why you don't have to raise the hood to buy a National.

#### Lavish in comfort

BEAUTIFUL, economical, efficient and lavish in comfort—this car is the climax of the National's success in car building since its pioneer beginning.



National Motor Vehicle Co., Indianapolis, Ind.

• Address.....



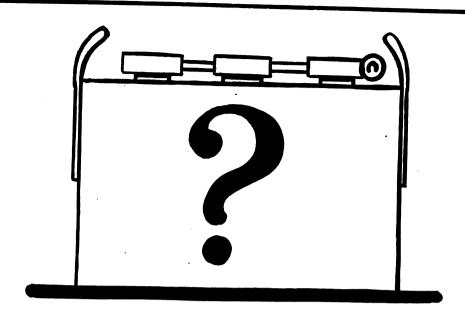
# The Car to See at the National Shows

You will be irresistibly drawn to the Spectacular Pathfinder Six just announced. The magnificent chassis construction—the startlingly new body lines—the refinement of finish and detail—all have won the enthusiastic approval of men who know automobile values.

### PLAN YOUR TIME AT CHICAGO SO YOU WILL HAVE PLENTY TO DEVOTE TO THE PATHFINDER EXHIBIT

DEALERS: We have a New Plan for Buying and Selling Automobiles that vitally affects your future relations with Factory and Consumer—Get it! It means co-operation for mutual benefit—service that makes more profitable sales and better satisfied customers. Also ask for details of the \$1,000 Prize Offer. Write today—

THE MOTOR CAR MFG. CO., INDIANAPOLIS, USA
1138 Division Street



# Don't Buy a Battery With a Queston Mark In It

In the Battery every possible question has been answered by the test of time.

And that the questions have received satisfactory answers is indubitably proven by the fact that all but a very few automobile manufacturers have adopted the state as standard equipment.

A Storage Battery of questionable or unestablished merit has no more right to a place on a good car than has a poor engine, unsafe wheels or a poor frame in which the factor of safety has been utterly disregarded.

The cient use in connection with widely varying types of Electric Lighting and Starting Systems to demonstrate, conclusively, the absolute elimination of its question mark.

### WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd Street. Detroit Branch: 1191 Woodward Avenue.

Chicago Branch: 2241 Michigan Avenue. San Francisco Branch: 243 Monadnock Building.

Indianapolis Branch: 438 and 439 Indiana Pythian Building.

Service Stations in all principal cities in the United States, Canada and Mexico.

(82

## Preponderance of Preference in 1914 Models

The American car manufacturer and the American autoist are in agreement with European manufacturers and owners in this respectthe preponderance of preference is in favor of the ball bearing because—

This type more completely eliminates friction than any other.

Therefore, it conserves motor energy.

Therefore, it is more durable.

Therefore, it economizes operating and maintenance expense.



A review of American 1914 pleasure car models, compared with a similar review in former years shows a strong tendency to the inevitable the survival of the fittest-ball bearings in all parts of the car.

Ball bearings are exclusively used in 61% of the front wheels of 1914 models, as against 51% last year.

Ball bearings are exclusively used in 64% of 1914 rear axles, including differential and wheels, as against 43% in

Ball bearings are exclusively used in 72% of 1914 transmissions, as against 64% in 1912.

The American-made New Departure is a superior ball bearing-it is guaranteed--it is made in the largest and most modern bearing manufactory in the world.

Literature on request

## THE NEW DEPARTURE MANUFACTURING CO.

Main Office and Works, Bristol, Conn.

Western Branch, 1016-17 Ford Building, Detroit, Mich.



## The Motor Shows Prove the Chalmers Best

UR strongest claims for the Master "Six" has been fully proved by the National Motor Shows of 1914. No greater evidence of the truth of our statements about this new Chalmers car could be found than in the well-earned and enthusiastic approval given it by the thousands of Show visitors.

Our firm belief that the "Six" is the car that the public demands and that the Chalmers "Six" is the one car that best fills that demand, was clearly proven, we believe, by the immediate popularity of the Master "Six" at the Shows.

The wonderful sales of the Chalmers "Six" during the year has been enough to prove our judgment good. But the tremendous crowds that viewed the Chalmers Show Exhibits, the amazement and enthusiasm expressed over the style and beauty of the Master "Six" shows that this great car is truly the "Master Motor of Them All."

#### Experts Agree on Merit

All sorts of people commented on the superior quality of the new Chalmers "Six." The crowds as a whole, and the critics individually voted the Master "Six" to be the greatest car at the shows. In point of looks, mechanical excellence, up-to-dateness in design and features, this great car won the admiration and approval of all.

Experts in every phase of the motor car business agree that the Master "Six" is the most advanced car on the market and that it has more new and proved features than any other car, no matter what its price. The opinion of those sharp critics was given only after careful comparison of all the cars exhibited, with reference to their actual performance on the street as well as to their appearance on the show floor.

## Chalmers Features Crowded the Master "Six" Exhibit

The splendid features of the Master "Sixes" attract attention wherever these cars are shown. At the shows they drew throngs to the Chalmers exhibit that never grow tired of watching the Chalmers-Entz Starter in action, of inspecting the stripped chassis of the Master "Six," and the various models of the Chalmers "Sixes."

Here are some of the features that made a "hit" at the Shows. They are the newest and best things of 1914 cars:

Long stroke, six-cylinder motor
Non-stallable motor
Genuine streamline bodies
Molded oval fenders
Full electric lights
Underslung rear springs
Four forward speed transmission

Clean running boards
All moving parts enclosed
Chalmers-Entz starter
Tapered bonnet
Left drive, center control
11-foot wheel base
Unusually wide doors
Gasoline tank and tire carrier at rear

#### Final Proof in the "Ride of Rides"

The Master "Six" not only excels in good looks, in lavish comfort and in fine features, but it sets a really new standard of performance. We ask no one to take just our word for the worth of this great car. We put the Chalmers "Six" through its paces to show the prospective buyer that no kind of road, no condition of travel, can stop this car or seriously bother it. We do "stunts" with this car that are simply unbelievable except by actual experience, and we prove to everyone who rides in it that this is a car whose smoothpulling ability, flexibility of power, ease of driving, comfort, and safety cannot be duplicated, even in cars of the highest price.

We want you to know about this great "Six" by actually seeing it and testing it out. Arrange with our dealer in your city to take the Chalmers Standard Road Test, the ride that is final proof of our claims.

Chalmers Motor Company, Detroit, Mich.

SIGNAL

Fifteen Hundred Pound Trucks

\$1350
Charit only)
For Permanence

Timken Axles
Covert Transmission
Gemmer Steering G

Stromberg Carburetor Eisemann Magneto Russel Jackshaft

Continental Motor

For Continuous Service

Fully Guaranteed on Solid Tires

SIGNAL MOTOR TRUCK COMPANY, DETROIT, MICHIGAN

# "American" Axles

# Acknowledged the Highest Class Axles That Are Placed in Any Motor Car

STUDY the best Bevel or Worm Drive Axles imported from Europe for either gasoline or electric pleasure cars, and you will be in a position to appreciate the superiority of "American" Axles.

That "American" Axles, judged by any given standard, have no serious rivals on this side of the Atlantic, will not, of course, be questioned.

Direct comparison of these axles with the best products of foreign makers, prove positively that "American" Axles concede nothing to any other axle—wherever built.

Built with rigid insistence upon highest quality in every detail, they are naturally found only on cars of corresponding quality in all other respects.

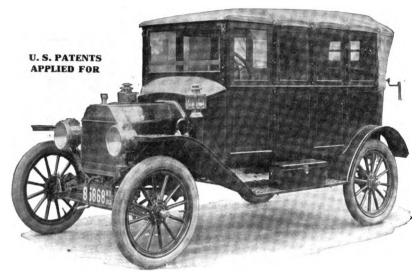
This excess of quality furnished by "American" Axles is a direct advantage to the car owner, because mileage and maintenance depend directly upon axle efficiency.

"Ametican" Axles alone offer the option of the highest class of Bevel or Worm gears. Both are fitted throughout by us with the best types of foreign made ball-bearings.

The adjusting and full floating features of "American" Axles are fully covered by our own patents and by shop rights from other patentees.

THE AMERICAN BALL-BEARING CO., Cleveland, Ohio

# The Lewkowicz Convertible Body



Two Bodies in One--A Touring Body When You WANT It--A Closed Car When You Need It

The Change is made in less than one minute

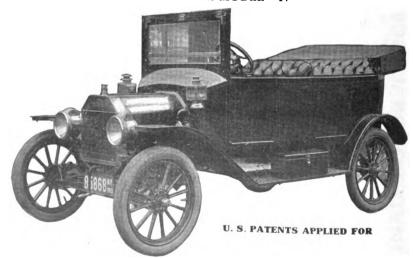
The Lewkowicz Convertible Body is a wonder in mechanical construction. No tools necessary! Not a screw!---not a bolt!---not a pin!---is used in making the change in either direction. So easy that even the most delicate woman can do it! The windows drop in their casing on the side of the car, like in the most expensive Limousine. Waterproof!---coldproof! Solid and staunch as a Limousine. When touring anywhere----and you are caught in a storm---without even soiling your hands you can get full protection in less than sixty seconds!

FORD OWNERS---You are the majority of owners in the United States. We have designed the automobile body shown in the pictures especially for you—to fit FORD CARS MODEL "T."

FORD AGENTS
AND DEALERS--Double your income by
handling the LEWKOWICZ CONVERTIBLE BODY.
Apply—immediately—for territorial rights.

OWNERS OF EVERY CAR----Write for full description and prices on your present model.

MANUFACTURERS---NOW---is the time for you to get in on a ground floor proposition on a royalty basis. Write us at once.



Convertible Automobile Body Corporation

Office: Longacre Bidg., Broadway and 42st St.—NEW YORK CITY—Factory: Park Ave. and 128th St.

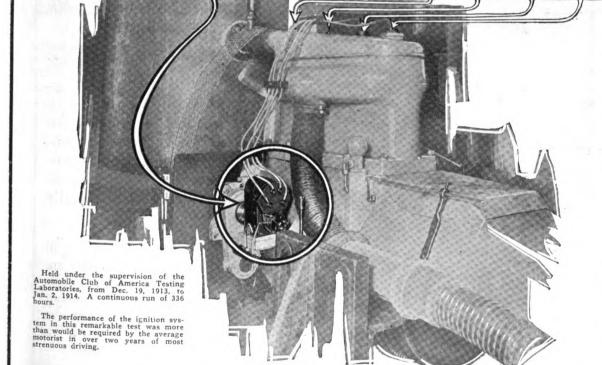
"Phone 7838 Bryant"

u

# That Moline-Knight Test

Over 44,000,000 Sparks Without a Miss

# BOSCH MACNIEURO and DEFERRA



THAT unprecedented test of the Moline-Knight Engine was made possible by the rather astonishing performance of the BOSCH MAGNETO and the BOSCH PLUGS. For two weeks—day and night—without a stop—without an adjustment of any kind, the Bosch Magneto—a type DU 4 Duplex—fired the gas charges without a miss.

from the Magneto Real Hot, Intense BOSCH Sparks across each Plug

The Bosch Plugs—the standard type with three crescent electrodes and the Bosch Steatite insulator—withstood the extraordinary high compression, the extra lubrication and the extreme heat, with their usual resistance—not a miss—and still in perfect condition to repeat the same performance over again.

BE SURE THE CAR YOU BUY IS BOSCH-EQUIPT

BOSCH MAGNETO CO., 224 West 46th St., New York

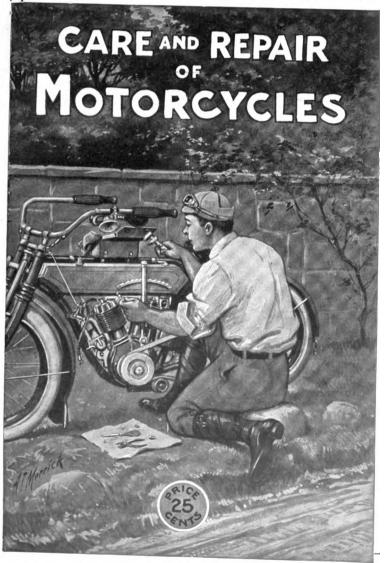
Chicago Detroit

Over 99 Service Stations in U. S. and Canada

San Fancisco Toronto Spend a quarter for this book—save many dollars in repair bills

It is the friend be on the jo of trouble a m to unders

It is brim for and suggest type of mot









# Two New Kelly Truck Models

2 Tons

5 Tons

We announce the addition of two models of Kelly trucks—capacities 2 and 5 tons.

These new models round out what many experts pronounce the best line of motor trucks on the market today.

Our improved 1 and 3½ ton models, which were announced a little more than a year ago, were instantaneous successes. The new models will be even greater successes.

We have always had the quality. Now we have a complete range of models. With 1, 2, 3½ and 5 ton models we have a suitable capacity for every reasonable business requirement.

The entire Kelly line is designed as a harmonious whole. It is the result of eight years of uninterrupted observation of the evolution of the successful commercial car.

May we send you catalog and full specifications of new models?

The Kelly-Springfield Motor Truck Co.

900 Burt Street Springfield, Ohio

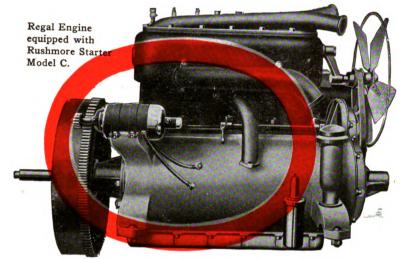


# Does the Public Expect Too Much?

# What should an engine starter be required to do?

The following cars are factoryequipped with the Rushmore Starting and Lighting System:

> Simplex Knox Alco Regal Stafford Lancia Mercer Crane Kline Multiplex S. & M.



The following cars are Rushmore-equipped in America:

Mercedes DeDion-Bouton Isotta Fraschini Austrian Daimler Delaunay-

Belleville .

Should it be operated without manual gear-shifting, by the simple pressing of a button, or is further manipulation acceptable?

Should it simply turn the engine over, trusting to a hot spark, a good mixture, and (in winter) to noncongealing oils and hot water on the carburetor, to get the engine going at all?

Should it go a little further, and exert a maximum torque sufficient to overcome the resistance of cold stiff oil, thus limbering the engine by the heat of its own piston friction?

Should it go yet further, and eliminate the cold-mixture problem. Should it spin the engine with such energy that the sudden heat of compression will vaporize the raw gasoline reaching the cylinders, thereby making the start practically instantaneous, no matter how cold the engine?

Finally, should the user be content merely to set the free engine going, or should he, if a quick getaway is desired, be able without injury to the battery, to start the engine with the first speed gears in mesh, thus saving time and gear manipulation?

We submit that the public has a right to expect all it can get for its money. We hold that the most generally useful and adaptable starter will be the one ultimately preferred, regardless of any dogma as to its. "proper sphere" of action.

The fact that an engine can be oiled by hand, cranked by hand, and its carburetor adjusted by hand, did not prevent men from devising automatic oilers, starters and carburetors.

Nor is the fact that an engine can be started under "favorable conditions" by an electric starter likely to prevent men from seeking to make the starter do as much more than that as possible.

A light or medium-sized car, equipped with a Rush-more Starter, can be started from "dead" with the first speed gear in mesh, provided the mixture and spark are normally good; and this use of the starter entails absolutely no injurious consequences to either Starter or battery.

While not ordinarily important, ability to start in this manner may be valuable when quick action is demanded—as, for example, with the car stalled on a railroad track. And the ability of the starting equipment to respond to such a severe demand is not a bad test of its quality in lesser ways.

RUSHMORE DYNAMO WORKS Plainfield, N.J.

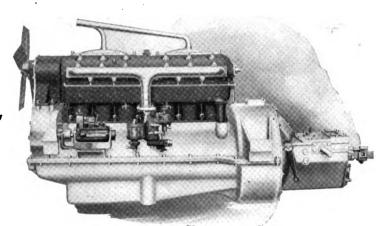
#### The Most Remarkable of All Cars

### Speedwell Rotary Six

On January 1st, 1914, the Speedwell Six equipped with six cylinder rotary valve motor made its appearance. This wonderful motor, which has been perfected by seven years' test and development, is built in its entirely in the Speedwell shops.

Every automobile owner, every dealer, every prospective car buyer will find our Speedwell Rotary Six literature intensely interesting. It concerns one of the few notable changes in automobile motor design in the past decade.

Over two-thirds of this season's output of Rotary Sixes already placed-don't delay. Investigate now.



Deliveries of Speedwell Rotary Sixes Start January 1st.

#### The principal points of advantage in the Speedwell Rotary Valve Motor are-

Simplicity and silence continued through the life of the motor, freedom from vibration, durability, no grinding of valves, perfect combustion chamber, greater freedom from carbon, fewer parts, unbalanced reciprocating motion eliminated, more even cooling, no premature ignition, no loss of power

caused by leaky or incorrectly timed valves, and starting and lighting. The standard equipment is greater range of speed.



#### **Brief Specifications** of the Speedwell Rotary Six

Speedwell Rotary Six Motorbore 41/8 in., stroke 51/4 in., in unit with dry disc clutch and selective sliding transmission. 135-inch wheel base.  $36 \times 4\frac{1}{2}$ tires all around on five-passenger, 37 x 5 on seven passenger. Wagner electric starting and lighting system.

Dual ignition independent of complete and of uniform excellence.

Five passenger touring, \$2850

Seven passenger touring, \$2950

The Speedwell Motor Car Company, Dept. W. Dayton, Ohio

The Speedwell Rotary Six will be exhibited at the Chicago Show



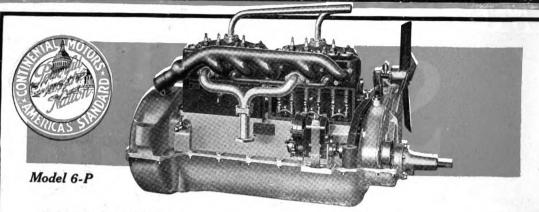
# Spit Fire Mosler PRIMING

AND ALL OWNERS READ THIS

Not a copy. Original in design. Not a makeshift. Made an integral part of the plug Plug







Model 6 N—A new Light six-cylinder engine, and Model N, a new light four, will be exhibited for the first time at the Chicago Show.

### Continenta

To his dealers and customers the car builder who uses a Continental can offer these three certainties: Sure Delivery, backed by financial strength and exceptional manufacturing facilities; High Quality, assured by a record of ten years of unqualified success; Sales Prestige, the cumulative testimony of 80,000 Continental owners.

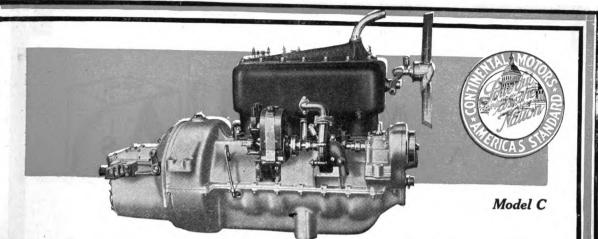
Delivery, Quality, Prestige-these are the Continental

### Continental

Largest Exclusive Automo

DETROIT PLANT, SIXES ONLY





### Motors

Certainties. Without them a salesman works under a heavy handicap.

And lastly, this manufacturer can offer a motor which has been famous for a decade; not made to meet a price, nor to shatter quantity records, but made to fulfill a service ideal; a motor advertised through a national and direct campaign of publicity—and by 80,000 users; the motor that is really America's Standard, the one by which all others are measured.

The Continental exhibit will be one of the most important features of the Chicago show. You will find it at Booth 40, Gallery, Coliseum.

### Motor Mfg. Co.

lotor Builders in the World

MUSKEGON PLANT, FOURS ONLY

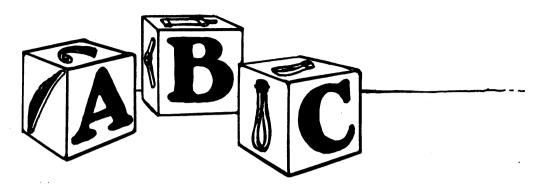


#### MAYO RADIATORS



EVENTS have proven that more courage and ability are required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY
New Haven, Connecticut

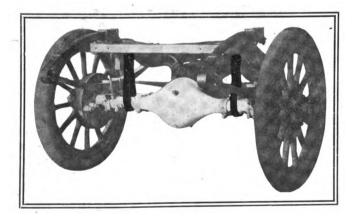


■ Springs are put on automobiles to produce a flexible connection between roads and loads.

¶ Shock Absorbers are put on springs to damp out spring oscillation and to make spring action easier and more comfortable.

Rebound Straps are used on cars either with or without shock absorbers to snub extremely hard rebounds which occur immediately after the condition of the roadway and the nature of the load has caused a sharp depression of the springs.

**Gilmer Rebound Straps** are standard equipment on the best grade (not alone the highest priced) American cars because of their remarkable strength, durability and general excellence. Gilmer Rebound Straps are a woven fabric treated against decay—they are made in sizes and capacities for every car from Fords to Pierce-Arrows or Packards.



L. H. Gilmer Co. 52 N. Seventh Street Philadelphia, Pa.

### By All Odds the Biggest Sensation of the Motor Year-

### The Phenomenal Growth of the Detachable Wire Wheel

Last year 5 cars were shown at the New York Show equipped with wire wheels. This year 35 makers show their cars equipped with wire wheels. These figures speak for themselves.

The trend of the times is inevitable—buyers must have wire wheels.

1913 **AUTO** SHOWS



LAST 5 makers exhibited cars
YEAR 5 with WIRE WHEELS

mand for wire wheels.

Today the car buyer who wants his purchase to look like a real car will be content with nothing except the ultimate wheel—the one that gives the greatest resiliency, the greatest comfort to the passengers and the greatest tire mileage of any wheel yet devised-THE HOUK.

The Houk Detachable Wire Wheel is Now Ready for Every Make of Car



DETACHABLE

### WIRE WHEEL

"The Wheel That Makes a New Car MODERN"

Was shown at the New York Show on 21 makes of cars, as against 9 of any other make.

makers exhibited cars with WIRE WHEELS **DEALERS** 

From the day that the HOUK WIRE WHEELS were first made, we have been besieged with letters from CAR OWNERS who wish to equip their cars.

Today we are ready to supply that demand.

Are you in a position to take advantage of that demand and that business? If so, here is vour opportunity.

We have a most attractive proposition for you. If interested—now is the time to act.

MANUFACTURED BY

HOUK MANUFACTURING COMPANY **BUFFALO, NEW YORK** 

> FOR GEO. W. HOUK COMPANY

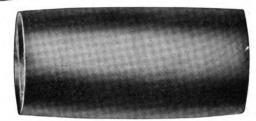
(Licensee Under Rudge-Whitworth Patents)

1700 Elmwood Avenue

BUFFALO, N. Y., U. S. A.

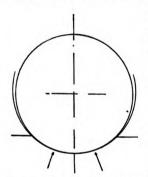






#### When the Ball Becomes a Roller

If The real meaning of the Gurney 4% Raceway may be made very plain if we take the diagram of a ball resting in a curve of 4% greater radius, straighten out the race curve until it becomes flat, and then increase the diameter of the ball circle until it bears the same contact relation to the straight line that the ball originally bore to the 4% race groove. This diagram shows graphically what is the advantage gained by this sort of raceway.



¶ The roller bearing makers elongate and straighten out the ball into a roller in the effort to get more contact. We close up the raceway close to the ball to accomplish the same end. We realize as much in getting ample supporting contact surface and we avoid the difficulties inherent in all roller bearings consequent upon the necessity of maintaining alignment, and retain the advantages of the simplicity and low friction of the ball roller.

¶ A ball in a 4% race groove gets about the same degree of contact that one twenty-five times as large gets on a flat surface. The physical equivalent of a ball in a 4% raceway is not a ball twenty-five times as large, but a barrel-shaped roller having the same diameter as the ball and a crowning or bulging surface, the radius of the crown being twenty-five times the radius of the ball. Such a roller will support just twenty-five times as much as the ball on a flat sur-

face. That is, the advantage of the 4% raceway is to multiply the supporting capacity of the ball by something like twenty-five. Or, one row of balls in a 4% raceway will hold up as much as 25 rows on flat raceways.

¶ This affords some explanation of our insistent emphasis of race contour. It also partly explains why the alleged greater capacity of the roller bearings, which their advocates so vociferously claim, is not in evidence in actual service.

The Balls Are Better Rollers Than the Rollers, Especially When They Roll In Gurney Raceways

GURNEY BALL BEARING COMPANY, Jamestown, N. Y.

### There is satisfaction in the ownership of a KisselKar

YOU'LL be proud to own a KisselKar—and your pride is justified in the knowledge that it is an automobile of consistent performance. Every tried and tested feature in automobile construction is embodied in it. The stand-up records of the thousands of KisselKars in use is a striking demonstration of what can be accomplished by the right application of mechanics and skillful workmanship.

# KISSELKAR

In appearance, comfort, silence and ability the KisselKar is unsurpassed-in innumerable details and refinements it is an immeasurably superior automobile. The liberal wheelbase, emphasizing the long low effect of the body and unusually roomy tonneau and deep seats, give the KisselKar a distinction not sur-

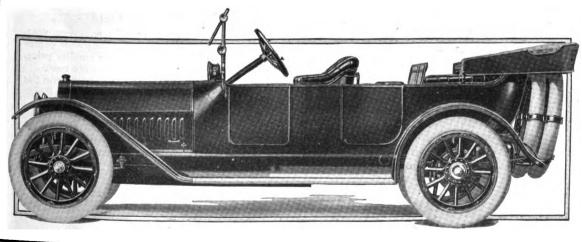
passed even by the highest priced automobiles. The KisselKar Catalog describes and illustrates the three models; 60 "Six" at \$3150; 48 "Six" \$2350; 40 "Four" \$1850. Eleven types of bodies. All fully equipped, electric lighted and started, left hand drive, center control. If you are interested, write for this catalog.

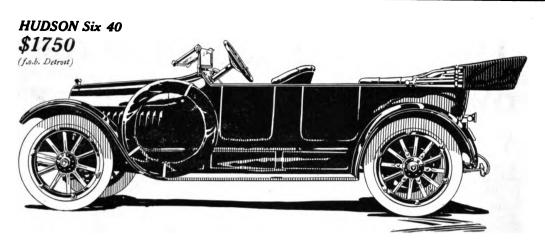
#### Service Contract

The KisselKar is sold under a written guarantee of service to owners—a definite contract that plainly stipulates the scope of KisselKar service. The unusual facilities at the KisselKar Service Stations, at all principal points, are always at the disposal of owners of KisselKars and KisselKar Trucks.

KisselKar Trucks-six sizes-1500 lbs. 1-1 1-2-2 1-2-3 1-2-6 tons. Big illustrated portfolio sent on request.

Kissel Motor Car Company, 159 Kissel Ave., Hartford, Wis. BOSTON, NEW YORK, CHICAGO, MILWAUKEE, KANSAS CITY, MINNEAPOLIS, ST. PAUL, DALLAS, SAN FRANCISCO, LOS ANGELES, OAKLAND, Philadelphia, Detroit, Houston, El Paso, New Orleans, Washington, Baltimore, Nown, Jowa; Omaha, Hastings, Neb.; Madison, Montreal, Quebec, Toronto, Winnipeg, Calgary, and 300 other principal polats throughout America.





### Tens of Thousands Want a Six Like This

The HUDSON Six-40 is the first Six 54, which last year outsold any other Six in America to offer these things to car buyers

A high-grade Six which undersells any comparable Four.

A Six which underweighs all Fours of equal size and power.

A Six which shows less operative cost than Fours of like capacity.

This Six-40 weighs 2,980 pounds certified railway weight. That is 400 pounds less than our last year's Four-the HUD-SON "37." It consumes one-fourth less fuel under same conditions. And compared with other Fours anywhere near in this class the difference is as great or greater.

#### Note What This Means

Here is a Six-40 with the new streamline body-handsomer than any Four on the market today.

It is designed by Howard E. Coffin, who for many years has held first rank among automobile engineers.

It comes from a factory which is among the world's largest builders of Sixes, the factory which builds the HUDSON Sixever built.

It has a 123-inch wheelbase-The true streamline body-Two disappearing tonneau seats-Gasoline tank in the cowl dash—
"One-Man Top" made of Pantasote. Quick adjustable side curtains carried in envelope in the top, invisible and without interference with passenger head-room.

The extra tires are carried ahead of the front door. Every device and feature accords with the latest practice. It has the Delco patented system of electric starter and lights. Headlights-have dimming attachment.

And this car sells for \$1750 f. o. b. Detroit.

#### Its Enormous Field

Tens of thousands of men have, every year, paid more than this price for Fours. Now comes a Six-40 of the highest grade, at a smaller price, with lesser weight and lower operative cost.

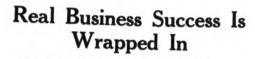
Down to this class, Sixes already have won the field from Fours. Can anyone think that Fours in this class can compete with this new Six-40?

The evidence is that they can't. The demand for this new car is breaking all HUDSON records.

This car offers dealers a great opportunity. Please write us about it.

Hudson Motor Car Company 7765 Jefferson Ave., Detroit, Michigan, U. S. A.

(291)



#### FISK PURE PARA TUBES

We know of hundreds of instances where Fisk Tubes used in tires of other makes, have sold hundreds of Fisk Quality Casings.

The car owner who has experienced the relief of Fisk Tube Service naturally turns to the Fisk Company for tire satisfaction. Profitable, permanent customers is the result.

Fisk Dealers Treat Their Customers Right Because We Treat Fisk Dealers Right. Send to Dept. 23 for our Dealer Proposition.

#### The Fisk Rubber Company

Factory and Home Office

Chicopee Falls, Mass.

Fisk Branches in All the Principal Cities

# Now is the time to make your choice

DECIDE now on your choice of tires. Give weight to the decision. Consider most carefully. There is a definite pledge of service for Ajax tires. They are guar-

anteed in writing for 5,000 miles. There is a large satisfaction for users.

Will you be all things to all men? Or will you keep your eye single to, and pin your faith to Ajax tires and share in Ajax success?

Reflect! The demand for Ajax tires has always exceeded the supply, and this in spite of important increases of facilities in each year, and continuous twenty-four (24) hours a day

operation (Sundays alone excepted), without curtailment of the working force since February 1911.

Be assured Ajax dealers are

accorded all the protection their efforts entitle. A jax branches are for the convenience of Ajax dealers, to facilitate shipments.

Write today for the Ajax sales plan. It is an opportunity for profit—your opport unity. Don't delay.

Act upon your present good impulse. Two new Ajax booklets are ready for distribution, with two others on the press. These will be sent on request. Write for them.

### AJAX TIRES

Guaranteed

(in writing)

5,000 Miles

"While others are claiming Quality we are guaranteeing it"

#### AJAX-GRIEB RUBBER COMPANY

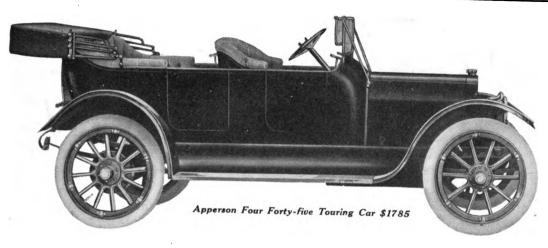
1796 Broadway

ПРЕГОЗОВЈЕ ОВ ОБОТ. В ОТ. В ВИТА В ПРИМИКВА ОВРСИМЕНТИ ПОВОДИНАТА

Factories, Trenton, N. J.

nkunnaamuskun annoministatuurin kuutinatiatista kääteen.

**New York** 



If you wish to make quick, easy sales, the Car you handle must have a working, prosperous factory and organization behind it.

And, furthermore, critical buyers will raise countless and unanswerable objections against any car whose maker is now in financial difficulty or regarding whom there is the slightest whisper of impending trouble.

The Apperson Brothers have been making the

### FAMOUS APPERSON "JACK RABBIT"

#### "THE WIZARD OF THE HILLS"

AT KOKOMO, INDIANA, CONTINUALLY SINCE 1893. They will continue to manufacture cars because of the merit of their product and their reliable, sound business methods—approved by hundreds of prosperous, prominent dealers.

Think it over!

Now and then a good territory is open for an aggressive and progressive dealer.

#### Address Department "C" for Prompt Attention

Light 4-45 Touring\$1600.00	4-45 Touring\$1785.00
Light 4-45 Roadster 1600.00	4-45 Sedan Limousine 2500.00
Light 4-45 Coupe 2350.00	6-45 Touring 2200.00

#### APPERSON BROS. AUTOMOBILE COMPANY

CHICAGO, ILL. 3300 INDIANA AVE.

Kokomo, Indiana

PORTLAND, OREGON 58 NO. TWENTY-THIRD ST



Under Auspices of Automobile Chamber of Commerce, Inc.

#### At CHICAGO

# Coliseum and 1st Regiment Armory

January 24-31

Passenger Vehicles—Parts—Accessories

S. A. MILES, Manager

Auditorium Hotel, Chicago

t. Louis

(2214)

# This double chamber

Sectional View Note porcelain end of chamber

The J-M (Mezger) Plug is entirely different from any other. It has a double chamber formed by a porcelain "petticoat" around the center electrode.

This "petticoat" extends to the end of the plug and is always so intensely hot at the lower extremity that carbon is burned up the instant it settles.

Therefore, the accumulation of soot at the sparking point is positively prevented.

This plug is actually self cleaning.

Another important feature: Rapid changes of temperature can not crack the porcelain in this plug. In tests we have heated the plug red hot and then immersed it in cold water without the porcelain breaking.

Millions of these plugs have been sold. In fact, over 400,000 of the best cars in America are now equipped with J-M (Mezger) Soot-Proof Plugs.

They have been on the market over 12 years, and many that have been in use for over 8 years are still in service and as good as new.

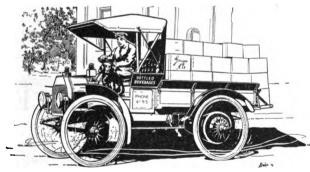
**QUARANTEE** The J-M (Mezger) Soot-Proof Plug is backed by a five-million dollar concern with a fifty-five year record for square dealing. If any plug does not give satisfactory service, we will replace it with a new one. Price, \$1.00.

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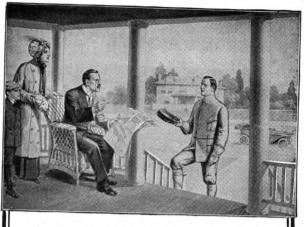
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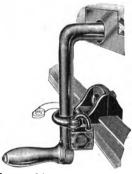
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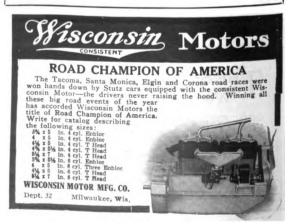


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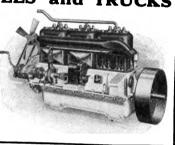
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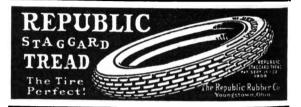
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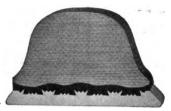
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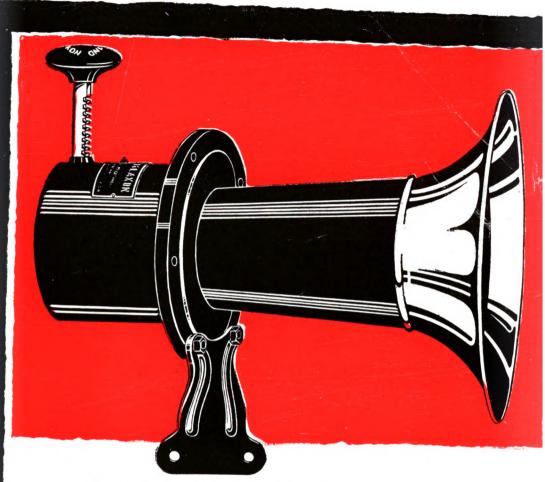
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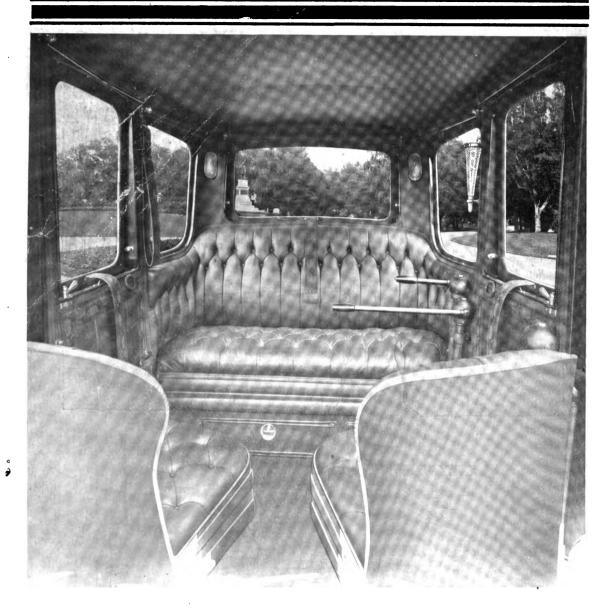


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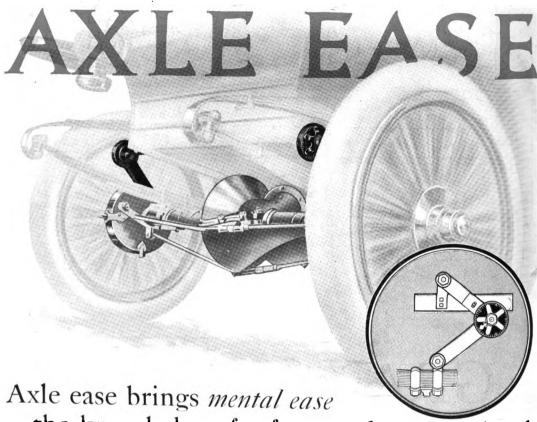
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GRAY & DAVIS Inc.

Boston, Mass.

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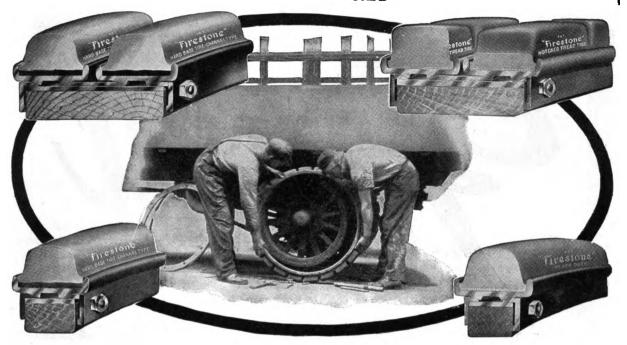
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#### This Year More than Ever---Be a Regalist

A REGALIST is a motorist or dealer who has learned wisdom by experience. And this year will witness a great increase in their number.

For 1914 will witness the real test—not

For 1914 will witness the real test—not so much of motor-cars as of motor-car manufacturers.

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The Regal stands preeminent among such cars. Seven years of success are back of it. A thoroughly responsible company, with a million-dollar plant, makes it.

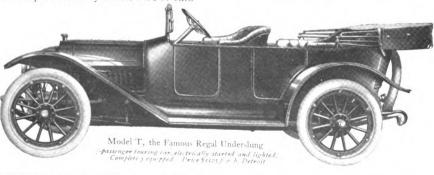
And the exclusive Regal design and construction features, famous the world over, make possible a comfort, a mechanical efficiency and an economy of operation impossible in any other car.

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### SHARRER ONE HAND TOP

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Before the show it was generally conceded by the leading automobile engineers and top builders that the SHARRER TOP was the best in its class. Popular opinion will be the same at Chicago.

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URING the last quarter of 1913, ending December 31st, we produced and delivered over 12,000 Overlands-one fourth of our entire output for the season. And this quarter is acknowledged everywhere as the poorest and dullest quarter of the year.

Despite this, and directly in the face of the slow season, we broke every existing sales record, not only of this quarter but of every previous quarter during our existence.

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Manufacturers of the famous Overland Delivery Wagons, Garford and Willys-Utility
Trucks. Full information on request.



#### KLAXON TAKES FIRST HAND HORN INTO FEDERAL COURT

Sues Johns-Manville as Marketer of Long Signaling Device—Defendant Loses First Round of Counter Attack.

Following up its advantage and making the most of the decision rendered by Judge Chatfield in the Newtone case, the Lovell-McConnell Mfg. Co., of Newark, N. J., has instituted suit in the United States District Court for the Southern District of New York against the H. W. Johns-Manville Co. of New York, for infringement of the Klaxon patents Nos. 923,048, 923,049 and 923,122, all of which were sustained by Judge Chatfield's sweeping opinion.

The infringement complained of consists in the Johns-Manville company's sale of the Long horn made by G. Piel & Co., whose entire product the defendants are marketing.

The case is of more than ordinary interest, however, in that it is the first in which the hand-operated horn has been involved and marks the determination of the Klaxon people to even more clearly establish their rights to that type of signal. In all other of the suits which they instituted, of which the Newtone was but one, the horn operated by an electric motor was in dispute.

In its complaint against the Johns-Manville Co. the Lovell-McConnell Co. asks the usual injunction and accounting and cites Judge Chatfield's decision as one of the reasons for the granting of the injunction prayed for.

Late last week, and previous to the filing of this action, the Johns-Manville Co. had applied to the court for an order restraining the Lovell-McConnell company from interfering with the advertising of the Long horn, from issuing threats calculated to injure its sale, and doing other such things. The restraining order was

granted but it endured only until Tuesday, when Judge Ward, in the Federal court in New York, ruled that the order be vacated and the motion for a preliminary injunction be denied. In a short memorandum he stated: "I see no evidence of bad faith on the part of the defendant or anything illegal in the notice it has given to the periodicals in which it advertises."

The Johns-Manville complaint charged that the Klaxon tactics constituted unfair competition and asked for \$50,000 damages. The matter will come up again tomorrow when the formal motion to dismiss the complaint is made.

#### Reo and Henderson Join Dyer Circle.

At the first of the present year four new names were added to the list of car manufacturers who have taken out licenses under the Dyer automobile and transmission patents, owned by the Enterprize Automobile Co. They are: Henderson Motor Car Co., Indianapolis; Reo Motor Car Co., Lansing, Mich.; Zimmerman Mfg. Co., Auburn, Ind., maker of the De Soto car, and Standard Motor Truck Co., Detroit. The list now comprises 109 manufacturers.

#### Shapleigh Gets Mansfield Cable Structur.

Having perfected the necessary arrangements, which carry with them the placing of a large order, the Mansfield Tire & Rubber Co., of Mansfield, O., has appointed the Shapleigh Hardware Co., of St. Louis, sole distributer for the United States of the Mansfield Cable Structur tires and five-inch tubes. The Shapleigh Hardware Co., as is fairly well known, is one of the largest jobbers in this country.

#### Mayor Purchases Midland's Real Estate.

Harry M. Schriver, mayor of Rock Island, Ill., has purchased for \$22,000 the real estate of the bankrupt Midland Motor Co., in East Moline. The best previous offer for the property was \$21,000, which the referee refused.

#### MICHIGAN BUGGY OFFICERS ARE PLACED UNDER ARREST

Five of Them, Including Former
President, Indicted by Grand
Jury — Three Real Estate
Men Also Involved.

Not unexpectedly, all of the officers of the bankrupt Michigan Buggy Co., of Kalamazoo, have been indicted by the special grand jury which was called to probe that malodorous failure. The men who were indicted and arrested are Frank B. Lay, Sr., president; Frank B. Lay, Jr., vice-president; George T. Lay, another vice-president, and Victor L. Palmer, treasurer and general manager, and M. H. Lane, former president of the company. All were released on bail, Palmer's being fixed at \$20,000, Lay's, Sr., at \$5,000, his two sons at \$10,000 and Lane's at \$5,000.

Palmer was indicted on four counts—embezzlement, perjury, larceny and misdemeanor. The Lay brothers were charged with embezzlement, or larceny. Their father and Lane are accused of issuing fraudulent stock, the charge growing out of the formation of the Michigan Motor Car Co., which was a part of the Buggy company.

In addition to the indictment of the several officials, three real estate men, Fred C. Eldred, E. W. Rice and Fred A. Herreman, were indicted for having been concerned with fraudulent real estate transactions, or the issuance of the fraudulent stock for the Michigan Motor Car Co.

The notorious "velvet payroll," whereby the officers and several employes of the company were paid extra salaries, which were charged to the advertising account of a fictitious firm, J. Roach & Co., figures in the indictments of all of the men save the real estaters. Palmer and the two Lay brothers were indicted jointly on the charge of embezzlement

growing out of this payroll, two amounts being specified in the bill—one of \$26,-399.92 and the other of \$42,446.52.

Through the medium of this payroll, Frank B. Lay, Sr., received \$12,000 per year, his two sons received \$18,783.31 and Palmer \$14,083.27. Five other men profited in minor sums.

The investigations of the receiver, which disclosed the rotten state of affairs, so clearly foreshadowed the grand jury's action that the only element of surprise contained therein is the indictment of M. H. Lane, former president of the looted company. He was practically forced out of the presidency by the Lay interests, and since that time has had no friendly feeling for them.

The issuance of the fraudulent stock, to which Lane is accused of being party, is one of the few features of the nasty mess that has not been publicly aired, and just what Lane had to do with it is a matter of conjecture. He, however, always complained that after being relieved of the presidency and "kicked upstairs" by being made chairman of the board, he was merely a figurehead and was either outwitted or not permitted to attend meetings.

Lane and Lay, Sr., are brothers-inlaw, but Lane declares that the company's troubles were due to his brotherin-law's ambition to make his two sons industrial leaders.

Fred E. Eldred, the real estate man who was indicted by the grand jury, it is stated, will lay bare at least some of the facts having to do with the fraudulent issue of stock and the prospectus relating thereto.

The grand jury will reconvene on Monday next, when it is possible that further indictments may be presented.

#### Resale Nets More for Disco Assets.

Contrary to expectations, the court did not confirm the bid of C. H. Bender, of Grand Rapids, Mich., for the Disco Co., of Detroit, who proposed to organize a new company to continue the business. A new bidder, in the person of Mansell Hackett, appearing on the scene, the referee in bankruptcy ordered the sale reopened and on Saturday last, when the new auction occurred. Bender dropped out when the bidding reached \$27,500, the plant going to Hackett for \$27,600. He gave bond for \$28,000 that the money would be paid within 90 days.

Hackett has interested Detroit capital and will continue the Disco business. Bender's original bid, made at the sale on Wednesday, 14th inst., was \$17,200. The receipts from the sale will permit a creditor's dividend of about 25 per cent.

#### MOTOR WORLD

## GROSSMAN PRESSES CLAIMS OF BARBER PLUG PATENT

Having Acquired Interest in it, he
Now Sues Western Electric for
Infringement — What the
Patent Covers.

With the resources of the Emil Grossman Mfg. Co. backing the William Barber spark plug patent, the invention of the Brooklyn mechanic may assume proportions in the trade not anticipated when Barber entered the courts late last year with claims that his patent, No. 732,032, was being infringed.

One of the three plug concerns he struck at was the Grossman company, which makes Red Head plugs, and this suit speedily terminated when the Grossman company bought a one-fifth interest in the patent; having become an owner instead of an alleged infringer, the Grossman company this week filed suit in the United States District Court for the Southern District of New York against the Western Electric Co., of New York City. Barber also joins in the complaint.

His invention covers a spark plug in which the insulation is of two parts; the part near the firing end being of hard porcelain and the part at the cable end being of a less fragile material. It is charged that the Western Electric Co. at the last automobile show in New York exhibited a "combination porcelain-mica plug" which is an infringement of the Barber patent. The complainants ask the customary injunction restraining the defendant, and estimate their damages at \$10,000.

That the adjudication of the Canfield patent and the issuance of licenses by A. R. Mosler did not entirely clear the situation in the spark plug trade was stated at the New York show by a spark plug man: he said he understood that another series of litigation was about to be commenced and that many suits might

#### De Schaum's Cyclecar Project in Court.

W. Andrew De Schaum, who has promoted many things in many places and who, like many others of his inclination, is now "full of cyclecars," is in trouble again. The most recent creation of the De Schaum brain is the Automobile Cyclecar Co. In order to float it, money was necessary and to obtain the money De Schaum resorted to the not unusual procedure of selling paper. He sold 300 shares to Joseph Kopitzke, who purchased that number of the \$10 shares,

paying \$500 down. When the company failed to set sail on the sea of dollars, Kopitzke became so impatient that last week he instituted action to recover the \$500 which he had paid in.

In court, it came out that by the terms of the receipt given by De Schaum the voting power of the shares sold remained with De Schaum for three years, and, in his own defense, De Schaum insisted that he had not disposed of shares in a company but mere memberships in a syndicate.

#### U. S. Rubber Settles with Mrs. Theobald.

What seemed likely to prove a sensational suit in the Supreme Court for New York county was settled for a cash consideration and discontinued this week, when Carolyn De Wolf Theobald withdrew her action against the United States Rubber Co., Samuel P. Colt and a number of other officers and directors. She demanded that something like \$700.000 which was paid to an "inside syndicate" for securing control of the Revere Rubber and another company be repaid to the treasurer. She was the only complainant in the action and the amount paid her is not stated.

#### Stillwell Relinquishes Franklin Activity.

Having been elected corporation counsel for the city of Syracuse, Giles H. Stilwell has relinquished active connection with the H. H. Franklin Mfg. Co., of which he was a director, and with the Franklin Automobile Co., of which he was vice-president. The "parting gave such sweet pain" that Stilwell was tendered a dinner by H. H. Franklin, president of the Syracuse company bearing his name.

#### Gray Advanced to General Management.

William H. Gray, who heretofore has been serving as sales manager of Gray & Davis, has been elevated to the post of general manager, with headquarters in Boston. While exercising general supervision over the entire organization. Gray will, nevertheless, keep in close touch with the sales department and continue to direct the Gray & Davis selling policy.

#### To Make Storage Batteries in Newark.

The Titan Storage Battery Co., of Baltimore, of which Henry Keith, of New York, is president, has leased three buildings in Newark, N. J., which, when equipped, will be utilized for the manufacture of storage batteries. The buildings acquired were a part of those which at one time were occupied by the Titan Steel Works.

#### MOTOR WORLD

## "ANTI-WEED" FLAVOR IN NEW TRADE ASSOCIATION

Officers, However, Deny Object of Metropolitan Organization is to Combat Chain Maker—But Weed Gets Attention.

Although the organizers of the Metropolitan Association of Automobile Supply Jobbers and Dealers do not admit that the feeling in certain quarters of the retail trade against the Weed Chain Tire Grip Co. is responsible for the formation of the association, the Weed company and its recently promulgated contract have been objects of discussion by the organization; furthermore, the principal Weed distributers in the metropolitan district are not members of the new body.

As to the objects of the association, which at present embraces only New York City and adjacent territory, Secretary H. F. Hartien stated that it is "to protect the dealer and jobber," but at the same time he mentioned certain "monopolistic" tendencies on the part of accessory manufacturers. The "monopolistic" feature in several cases to which some dealers have objected is an effort to maintain prices, and while the new association has been referred to as an "anti-Weed association" and "price cutting" is mentioned in connection, Hartjen stated that the members have no desire to combat fixed price.

But as to the relations of the association with the Weed company, a committee, consisting of the executive committee and the officers, has been appointed to handle such association matters as come up in an investigation by the Federal government into the new Weed contract; while Hartjen denied that the association had instigated the investigation, he said the Weed contracts had been brought to the attention of United States District Attorney Marshall. This phase, however, apparently does not alarm the Weed company, for it is stated on good authority that the Weed company itself some time ago submitted copies of its contract to the proper officials at Washington, but has as yet received no reply.

The organization, which has been in existence but a few days, has as officers: President, W. E. Pruden, of the W. E. Pruden Hardware Co.; vice-president, Bernard Miller, of Newark, N. J.; secretary, H. F. Hartjen, of the Pruden company; treasurer, Frank Lowe, of the Lowe Motor Supplies Co.; Executive Committee: E. J. Willis, of the E. J.

Willis Co.; W. B. Richards, of the Richards Auto Supply Co.; T. B. Nesbit, of the Mutual Auto Accessories Co., and L. Levene, of the American Auto Supply Co.

Julius Bindram, a Brooklyn tradesman, was made a vice-president but apparently he had not been duly consulted, for not long after his election he resigned the office and his membership as well.

#### Mexican War in \$100,000 Rubber Suit.

Had it not been for "wars, revolutions, strikes and acts of God beyond the seller's control," there would have been no suit filed this week in the Supreme Court for New York county by Edward Maurer against the Rubber Goods Mfg. Co. As it is, because of the "uncontrollable" situations which have existed during past months in Mexico, Maurer wants \$100,-493 19

He claims that amount on a crude rubber contract; he says he contracted to sell the Rubber Goods Mfg. Co., which is closely allied with the United States Tire Co., 3,600,000 pounds of Para Brand Guayule rubber, to be delivered in monthly installments during 1913. The price each month was to be half the average price during the preceding month of Upriver Fine Para in New York and London.

Maurer delivered rubber until Mexico got to "revoluting" at high speed, when he failed to make deliveries; the first "fall down" was in September and then the rubber company repudiated the contract, he claims. But he states that since he could not prevent the revolution and the acts of God, he should not be held accountable for his failure to deliver. The amount he asks is based upon the deliveries for September and the following months of 1913.

#### Splitdorf Promises a "Startling" Battery.

John Splitdorf, with A. L. Kull. D. B. Nally and other of his associates, has organized the A. & T. Storage Battery Co., of New York, with a capital of \$1.000,000. Information regarding the project, however, is refused at this time. According to Kull, matters will not be ripe for at least one month, but he promises that the storage battery in hand will prove "not only interesting but startling."

#### Goodman "Goes Into" Body Business.

Henry Goodman, one of the veterans of the industry, who, during late years, has been identified with electric vehicles, has signed up with the Springfield Metal Body Co., of Springfield, Mass. He will have charge of the branch which will be established in New York.

## STROMBERG LOSES SUIT FOR TWO-SPRING CARBURETTER

Court of Appeals Agrees that Flechter Device Does Not Infringe
Perkins Patent—Diagrams
That Aided Decision.

Beyond probability of further litigation, it has been decided that the Perkins patent, No. 731,218, issued June 16, 1903, does not control the two-spring type of carburetter, the Flechter carburetter in particular. The decision was rendered last week by the United States Circuit Court of Appeals, in Chicago, Judges Baker, Seaman and Kohlsaat sitting, and the latter delivering the opinion of the court.

The parties to the suit were the Stromberg Motor Devices Co., of Chicago, and Leonard A. Parker, a Chicago garageman, who had made use of the Flechter carburetter and been sued as an infringer of the Perkins patent. The actual defense, however, was undertaken by L. V. Flechter & Co., of New York, and by the Trenton Brass & Machine Co., of Trenton, N. J., which, since the suit was instituted, took over the Flechter device.

At the time the complaint was lodged, the Stromberg people claimed that the Perkins patent covered all two-spring carburetters and, as a result, the litigation was of more than restricted importance. In May last, the lower court decided against the Stromberg interests, but they promptly filed an appeal, which, as stated, resulted in a second verdict for the Flechter device.

Illustrating its opinion by sectioned and indexed drawings of the two carburetters in dispute, the Court of Appeals says:

"The contention of appellant is, that defendant's supplemental air supply device, taken in connection with certain features of the primary air and fuel supply of defendant's carburetter, constitutes infringement of the patent in suit.

. . Appellee's so-called primary device is old in the art, but it is claimed by appellant that appellee's supplemental or auxiliary air supply device, taken in connection with the primary element of his carburetter constitutes an infringement of the claims in suit."

After discussing these claims with the aid of the illustrations, the court said:

"Inasmuch as appellee's fuel supply is always open to the influence of the suction of the engine, it follows that it cannot be regulated by adjustment and that

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when the air supply is changed, by adjustment, necessarily the ratio of the fuel and air is changed in the mixture. Thus the amount of air is varied while the amount of fuel remains stationary. In case the springs regulating the valve 19 are so adjusted as to increase their tension to the degree that the resistance of the valve to the suction influence will be increased, there will result a higher vacuum in the carburetter chamber before the valve 19 will open. This increase in vacuum will increase the suction and produce a greater flow of fuel from the fuel inlets. This will decrease . the percentage of the air supply, whereby it is apparent that a richer mixture is produced when the stiffer springs of the auxiliary device are brought into action than when only the weaker spring is used.

"Thus in appellee's auxiliary device increase of spring pressure tends to enrich the mixture for given speed, while the avowed object of the claims in suit is to produce a device which will vary the volume of the mixture by spring adjustment without varying the proportions thereof. If this be so, it is evident that there can be no co-action between the air and fuel supplies of appellee's carburetter and the valve 19 of the auxiliary air supply device within the meaning of the claims in suit.

"We find no physical evidence of coaction between appellee's supplementary air valve, and his air and fuel supplies, on the one hand, and on the other we fin! that in appellee's device the mixture supplied to the engine varies in the relative percentage of its parts with relation to each other, whereas in appellant's mixture the volume so supplied is varied, but the quality must and does remain constant.

"This difference in results clearly indicates that appellee's auxiliary air supply device is not the device of the claims in suit. Appellee's device does not therefore infringe that of the claims in suit, and the decree of the District Court is affirmed."

#### Suspension Bearing is Reorganized.

Reorganization of the Suspension Roller Bearing Co., of Sandusky, O., was effected last week after a three-days session of the stockholders, the resignations of all of the officers previously having been tendered. The company is controlled by V. M. Montgomery and A. W. Smith, of Spartansburg, S. C., who threw their influence in favor of the reelection of W. W. Neighbour as president and W. M. Harsh as secretary and treasurer, the latter succeeding E. A. Boyer.

#### U. S. MOTOR SETTLES ALL BUT ONE \$500.000 CLAIM

Fact Brought Out in Lifting Lien from Rhode Island Property— Remaining Claim Involves Carlson's Patent.

The long court procedure attendant upon the reorganization of the United States Motor Co. as the Maxwell Motor Co. seems near its end; when the matter of selling certain property in Providence, R. I., came up this week in the United States District Court in New York City, where the receivership was granted, the Maxwell company stated that there is now but one unsettled claim against the corporation and that it has more than enough to pay the amount if it has to do so.

This is a claim of \$500,000 by the Carlson Motor Truck Co., but it is regarded as of doubtful value because of its relations to early automobile history. It grows out of a suit brought by the Carlson company against the old Maxwell-Briscoe Motor Co. for infringement of the Carlson patent, No. 797.555, issued August 2, 1905, covering a removable cover plate in connection with other mechanism as applied to an opposed-cylinder motor. The case finally was decided in favor of Carlson in May, 1912, but an accounting was not granted; neither were damages.

The Carlson company, however, makes claim for the half million dollars because of infringement of the patent; at the time the suit was finally won the opposed motor, which had been used in the small Maxwell cars of some years ago, was no longer being used, so the victory for Carlson had little effect. The claim has been made, however, and because of the establishment of the infringement charge probably has some merit, but how much is to be determined.

The status of the case came to light when application was made for the removal of the receivers' and creditors' lien on certain real estate in Providence which the Universal Winding Co., of Boston, agreed last month to buy for \$150,000. The lien was removed by order of the court.

#### 35% and Hartford Suspension End Suit.

Since the 35% Automobile Supply Co. and William Rubly made peace last April after a long legal fight over one of those advertising contracts, the other actions which had been brought on the same grounds exhibited little life, and this

week the 35%'s suit against the Hartford Suspension Co., in the Supreme Court for New York county, was discontinued. In the advertising contract suits the claim generally was that the defendants had contracts for certain space in the 35%'s catalog, had agreed to pay for the space with goods and then failed to live up to the contract; the defendants in each case retorted that the catalog was not all that it had been represented to be.

#### Gurney Ball Bearing Elects Officers.

At the annual meeting of the Gurney Ball Bearing Co., held at its factory in Jamestown, N. Y., on Tuesday last, officers were elected as follows: President, William T. Falconer; vice-president, Henry K. Smith; secretary, Arthur W. Kettle; treasurer and general manager, S. Winsor Baker. Previous to the election, the stockholders chose as directors Messrs. Falconer, Smith. Kettle, Frederick W. Gurney, Alfred E. Hall, E. Snell Hall and Fred J. Galloway.

Despite the general business depression which has existed, the Gurney reports showed that the company had made a marked increase in gross business over the previous year and that orders in hand indicate an even greater increase during the coming twelvemonth. Additional machine equipment will be added to take care of the assured expansion to follow.

#### Who Wants to Buy Penn's Accounts?

By order of the court, the book accounts of the Penn Motor Car Co., of New Castle, Pa., will be closed by the receiver at public sale in Pittsburgh tomorrow. It is not likely that there will be an overwhelming rush of bidders. Several weeks ago it was reported-the report taking printed form-that E. F. Gerber, the former Michigan Buggy distributer in Pittsburgh, who later bought the Abbott Motor Co., of Detroit., had purchased or was dickering for the Penn plant for the purpose of manufacturing commercial vehicles, but, despite apparently reliable advices. Gerber denied that he has done anything of the sort or made any such statement.

#### Radford Designing Low-Priced Car.

W. H. Radford, at one time factory manager for the Warren Motor Car Co. of Detroit, has opened an office in the Moffatt Building in that city. He is designing a light car to sell at a low price and states that as soon as his work is completed the car will be backed by large capital and be manufactured on an extensive scale.

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# The V Veek's INCORPORATIONS

Charlotte, N. C.—Barringer Garage Co., under North Carolina laws; authorized capital, \$5,000; to operate a garage. Corporator—H. T. Andrews.

Houston, Tex.—Co-operative Auto Co., under Texas laws; authorized capital, \$5,000. Corporators—John H. Cutten, F. E. Sweeney and M. S. Murrav.

Dayton, O.—Durable Dayton Truck Co., under Ohio laws; authorized capital, \$25,000. Corporators—V. A. Troxell, J. B. Ford and C. B. Foley.

Chicago, Ill.—Chicago Motor Club, under Illinois laws; to promote automobiling. Corporators—W. E. Stalnaker, W. J. Boone, Henry Bosch and others.

Bay City, Tex.—Bay City Auto & Sales Co., under Texas laws; authorized capital, \$7,500. Corporators—M. Thompson, E. A. Thompson and W. D. James.

Williamston, N. C.—S. B. Biggs Iron & Motor Co., under North Carolina laws; authorized capital, \$25,000. Corporators—S. B. Biggs, J. W. Biggs and others.

Detroit, Mich.—K-R-I-T Sales Co., under Michigan laws; authorized capital, \$100,000. Corporators—Henry W. Standart, Walter S. and Albert W. Russell.

San Francisco, Cal.—Distillate Motor Equipment Co., under California laws; authorized capital, \$100,000. Corporators—H. M. McDonald, W. W. McDonald and G. S. Bartlett.

St. Louis, Mo.—Electromobile Co., under Missouri laws; authorized capital, \$100,000; to manufacture small industrial trucks. Corporators—Sanford J. Bernheimer and others.

Dover, Del.—Corsair Motor Co., under Delaware laws; authorized capital, \$25,-000; to manufacture motors and engines. Corporators—J. M. Satterfield, W. P. Carrow and M. M. Hirons.

Detroit, Mich.—Rex Motor Co., under Michigan laws; authorized capital, \$75,-000; to manufacture motors. Corporators—Charles H. Riopelle, William J. Frazier, and Alfred G. Robinson.

New Haven, Conn. — New Haven Welding Co., under Connecticut laws; authorized capital, \$5,000. Corporators—Henry F. Cadwell, William Hall and O. B. Cadwell, all of New Haven.

Chicago, Ill.—Roseland Auto Sales Co., under Illinois laws; authorized capital,

\$10,000; to buy and sell motor cars, parts and accessories. Corporators—R. J. Ton, Victor A. Beckman and M. Otto.

Lafayette, Ind.—E. A. Martens Co., under Indiana laws; authorized capital, \$10,000; to manufacture and sell lubricating devices. Corporators—E. A. Martens, W. W. Broadle and W. R. Peass.

New York, N. Y.—A. & T. Storage Battery Co., under New York laws; authorized capital, \$1,000,000. Corporators —John Splitdorf, D. B. Nally, A. L. Kull and W. C. Albers, all of New York City.

Chicago, Ill.—Todd-Beaver Co., under Illinois laws; authorized capital, \$25,000; to conduct a general motor car and motorcycle business. Corporators—H. M. Todd. James W. Beaver and Arthur J. Lever.

Chicago, Ill.—Chicago Street, Auto and Cab Owners' & Drivers' Association, under Illinois laws; for mutual aid and benefit. Corporators—John L. Hughes, James H. Mooney, Charles Deckler and others.

Toronto, Can.—Pneuma Tubes, Ltd., under Canadian laws; authorized capital, \$1,000,000; to manufacture tubes, tires and other rubber goods. Corporators—George H. Gray, William R. Willard and others.

Elmhurst, Ill.—Bright Auto & Repair Co., under Illinois laws; authorized capital, \$500; to manufacture and deal in motor vehicles. Corporators — George Bright, Ralph H. Mears and Harvey J. Bright.

Waterloo, Ia.—Wagner-Wood Auto Co., under Iowa laws; authorized capital. \$10,000; to conduct a general motor vehicle business. Corporators — William Wagner, William T. Wood and M. J. Wagner.

Chicago, Ill.—Shaw Motor Co., under Illinois laws; authorized capital, \$1,500; to manufacture and deal in motor cars and accessories. Corporators—Edward N. D'Ancona, A. J. Pilaum and Edwin B. Mayer.

South Bend, Ind.—Coliseum Machine & Garage Co., under Indiana laws; authorized capital, \$40,000; to make, repair and sell motor cars. Corporators—John Wlaz, William P. Furey and J. Elmer Peak.

Syracuse, N. Y.—Elasto Co., under New York laws; authorized capital, \$30,-000; to manufacture a tire filler. Corporators—John G. Ellendt, East Rochester; Albert T. Bradley, Rochester; Henry C. Kennedy, enfield, N. J.

Toronto, Can.—Dart Cyclecar Co., under Canadian laws; authorized capital, \$100,000; to manufacture cyclecars and other power-driven vehicles. Corporators—Harry B. Smith and Frank M. Lorsch, both of Toronto.

New York, N. Y.—Double Tread Tire Co., under New York laws; authorized capital, \$1,000; to deal in tires, etc. Corporators—James and Gertrude Martin, both of 145 East 53rd street; Joseph Schwartz, 501 East 86th street.

Chicago, Ill.—Stegeman Motor Truck Co., under Illinois laws; authorized capital, \$10,000; to manufacture, assemble and deal in motor vehicles. Corporators—D. H. Burklan, 1444 Catalpa avenue; R. C. Flodin, and E. E. Burkland.

Abbottsford, Wis.—Fancher Nu-Lock Co., under Wisconsin laws; authorized capital, \$25,000; to manufacture devices for securing nuts. Corporators—A. A. Fancher, Paul Benzmann, R. Prentice, George Black and M. Ellingson.

Chicago, Ill.—Saxon Motor Co. of Illinois, under Illinois laws; authorized capital \$5,000; to manuacture and deal in motor vehicles, parts, accessories, etc. Corporators—Eugene Goldman, Thomas W. Whitson and Sylvanus G. Levy.

Springfield, Ill.—Royal Electric Heater Co., under Illinois laws; authorized capital, \$10,000; to manufacture electric heaters, automobile appliances, etc. Corporators—William V. Brothers, David M. Brothers and George A. McCarkle.

Wilmington, Del.—International Automobile Owners' Protective Association, under Delaware laws; authorized capital, \$500,000; to furnish service by protecting owners of motor cars, wagons, etc. Corporators—H. E. Latter, W. J. Maloney and O. J. Reichard.

New York, N. Y.—Helix Tube Co., under New York laws; authorized capital. \$250.000; to manufacture automobile tires, tubes, etc. Corporators—George C. Howard and Clarence S. Houghton. both of 111 Broadway; James D. Gabler, 311 West 43rd street.

## EXPORTS INCREASE; VALUE OF TRUCKS IS 87% HIGHER

Number of Pleasure Cars Shipped Abroad also Advances—Parts Nearly Doubled — Average Values Are Decreased.

Exports of cars, parts, engines and tires from the United States during the month of November just passed gained by \$36,819 over the valuation of these products during the same month of 1912. The various geographical divisions which bought these products recorded losses in several instances, as did the commodities making up the total, but the aggregate, especially of trucks, showed a marked increase.

Pleasure vehicles advanced in number by 49 cars, which is an advance of 3 per cent., but in valuation the figures show a loss of \$74,164, a decrease of 4 per cent. In trucks, the advance in number of vehicles shipped to foreign countries was 33, an increase of 106 per cent., while the valuation of these enlarged shipments was greater by \$49.325, an advance of 87 per cent.

Parts moved upward by \$252,157, or 83 per cent., which caused the total valuation of cars, trucks and parts to be greater by \$227,318, or 11 per cent.

While Canada continues to be the heaviest buyer of American cars, it is not purchasing as heavily as a year ago and in November its purchases were less by 205 cars and \$153,609. The United Kingdom, however, which at one time made marked decreases in its purchases of American automobiles, now ranks second in the list and also made the largest gain for November, swelling its importa-

tions by 157 cars with an increased value of \$158,549. The next largest gain was that made by Asia and Other Oceania, which enlarged its takings by 81 cars and \$89,085. Next in the list is that division known as Other Countries, which advanced by 40 cars and \$25,145.

British Oceania, which generally follows the example of its parent country, as usual gained, buying 32 more cars at an added valuation of \$4,121; Germany, too, invested more money in American gasolene vehicles, its purchases being greater by 23 cars and \$3,630. Italy was another of the divisions to increase its purchases over those of the preceding November; sales to this Latin nation were more by an even dozen cars and \$1,620. France bought 4 more cars and raised the cost of its purchases by \$914. Other Europe gained also, but while it took 22 more cars their average value decreased and the increase in their cost was but

In November, 1912, the average value of the pleasure cars sold to foreign countries was \$1,056 and in November, 1913, it was \$982, a decrease of \$74 or 7 per cent. The value of the trucks shipped in November, 1912, was \$1,812, and in that month of 1913 \$1.648, a drop of \$164, or 9 per cent.

During the 11 months ending with November, the year 1913 gained over 1912 in number of cars exported by 2,-793, or 13 per cent., and the increase in value was \$3,234,130, or 15 per cent. The total of all products advanced by \$5,753,-223, or nearly 20 per cent.

Engines and tires both lost. Engines decreased during November by 381, or 79 per cent., and in value by \$49,222, or 53 per cent. Tires were less by \$141,277, a drop of 51 per cent. The figures in detail are shown by the subjoined table.

#### IMPORTS FALL OFF; VALUE OF CARS IS LESS BY 61%

None of Five Geographic Divisions
Increase Sales to America During
November—France Heaviest
Loser—Parts Gain.

During the month of November last not one of the five geographical divisions into which the world is divided by import statisticians gained in its sales of cars to the United States as compared with that month of the preceding year; the total of cars was less by 50, or 57 per cent., and the value decreased by \$120.578, or 61 per cent. Parts, however, advanced by \$45,557, or 208 per cent.

The heaviest loss was recorded by France, whose American sales shrank by 26 cars and in value by \$67,648; the next largest decrease was that of Italy, whose sales were less by 13 cars and \$19,526. Germany's decrease was 9 cars and \$23,006.

During the eleven month period ending with November, 1913, imports were less by 327 cars, or 42 per cent., and \$710,717, or 41 per cent., than in the same period of 1912.

The average value of cars imported during November, 1912, was \$2,279, and in November, 1913, \$2,102, a decrease of \$177, or 7 per cent. The figures in detail follow:

	November						
France	No. 42 11 19 7	912 Values. \$108,356 28,206 25,952	1	913 Values. \$40,708 5,200 6,426 15,684 9,755			
Total cars Parts (except tires)	87 	\$198,351 21,863	37	\$77,773 67,420			
Total cars and parts	87	\$220,214	37	\$145,193			

7	Novem	ber —	_						
Ouantitie	012	1	913	1	Eleven	Months 1	inding No	vember	
France 83	Values, Qu \$62,727	antities	s. Values.	Onantitia	S Volum	A <sup>19</sup>	12	19	IJ S Values
		07	\$63,641	385		Quantities	Values.	Quantitie	\$609,731
Italy	02,177	69	35.827		\$425,714		\$502.040		
United Kingdom	16.279	25	17,899		118,710		348.398		811,293
Other Europe	139,222	321	297,771		194,784		240.715		259,079
Canada 99 Canada 471	80.086	121	80.246		2.741.524		3.302.918		3.482,301
	550.362	266	396,753		650,642		1,178,847		1.435.495
	51.494	14	24.161		5.137.685	0.001	8,255,134		7.870.086
	48.114	50	48.058		432.316	-00	372.086	213	386,894
	************	203	218.930		303,434		331,230	455	445.596
Asia and Other Oceania		295	269,941		1.131.182		2,164,983	2,474	2.773.140
	• • • • • • • • • • • • • • • • • • • •	229	244,120	011	1.871.716	3,112	2,852,005	3,069	2,855,330
other Countries 51	59.735	91	84,880		719,083	1,469	1,464,358	2,230	2.218.897
Total care				247	264,141	671	630,463	1.983	1.729.465
Total cars 1,689		1,771	\$1.782.227	12500					
Commercial† 31	_56.176	64	105.501		\$13,990,931		\$21,643,177	24,500	\$24.877.307
Passengert 1,658	1,750,890	1,707	1.676.726	13,560	13,990,931	<b>‡288</b>	1524,754		1.586.147
Parts*	300,655		552.812			<b>‡7</b> .559	<b>‡7.402.888</b>		23,291.160
Total compand over 4			332.012	• • • • • •	2,951,188		4,236,765		5,730,074
Total cars and parts* 1,689	\$2,107.721	1.771	\$2,335,039	10.540					
Engines 480		99	43,497		\$16,942,119	21,707	\$25,879,942	24.500	\$30,607,381
Tires	275,360		134.083	11.246	<b>‡146,573</b>	8.175	1,036,532	8.478	1.481,801
Total and the			134.083	• • • • • •	2,257,727		3.034,699		3,615,214
Total value all products	\$2,475.800		\$2,512,619				5.057,099		
*Door not in 1 1			¢2.512.019	• • • • • •	\$19,346,419		\$29 951 173		\$35,704,396

<sup>\*</sup> Does not include engines and tires. † Not separately stated prior to July 1, 1912. ‡ Covers only last half of year.



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## In SALESROOM and GARAGE



James E. Sprague, after eight years of service, has resigned as assistant irrigation manager of the South Side Unit in the Sale River reclamation project to enter the automobile trade in Phoenix, Ariz. Last October he and Frank Huffer bought out the Arizona Auto Co., .in Phoenix, and since that time Huffer has conducted the business, which, however, now requires the attention of Sprague as well. Sprague also has real estate interests in and about Phoenix.

The Black-Frasier Motor Car Co. has succeeded the E. B. Lyon Motor Car Co. in Columbia, S. C. It will handle Hudsons in the State of South Carolina. The officers are: President, James M. Black; secretary and treasurer, J. G. Frasier. Black formerly was manager of the Lyon branch in Durham, S. C., while Frasier managed the Columbia business. The establishment of several additional branches is contemplated.

The Stanley Steamer Co., with a capital of \$15,000, has been formed in Milwaukee, to take over the J. C. Coxe Automobile Co., which heretofore handled the Stanley business in Wisconsin; the incorporators are J. C. Coxe, W. W. Burgett and F. S. Durham. The company has a garage and salesrooms at 4th and Prairie streets; W. W. Burgett is manager.

The Barringer Garage Co. has been formed in Charlotte, N. C., by L. J. Howard and T. H. Adams to take over the garage and supply end of the business of the Osmond L. Barringer Co. Barringer will continue as Locomobile dealer and with the Garage company will utilize the former Barringer building and location, 7-11 West 8th street.

The Ball Auto Co., of Fargo, N. D., of which W. M. Ball is the proprietor, is securing plans for a two-story garage, 300 x 65 feet, which will be erected in the spring on 5th street; it will extend through the block to 4th street and will have entrances on both streets. The building and equipment will cost \$50,000.

The Carr Motor Co. has been formed in Houston, Tex., to take over the Oakland branch, of which Robert C. Carr was manager; the salesrooms of the branch have been retained and the company will handle Oaklands in Harris and

Galveston counties. A new storeroom has been secured at 1202 Main street.

H. C. Biscoe, of Fredericksburg, Va., has formed the Biscoe Motor Co. and has opened a garage and salesrooms at Commerce and Winchester streets in the building formerly occupied by Boulware's Garage. Biscoe recently secured the Buick agency.

W. W. Lawler has sold to E. L. Kaufman his interest in the Kaufman-Lawler Auto Co., of North English, Ia. Kaufman has changed the style to Kaufman Auto Co. and will continue the garage end of the business; Lawler continues as a Reo dealer.

Frank S. Pattridge and Neill C. Cornell, of Oneonta, N. Y., have formed the firm of Pattridge & Cornell, and will open a salesrooms at 24 Maple street; they have secured the agency for the Firestone-Columbus line in Otsego county.

Fred Brost and Leroy Weler, who have dealt in tires in Sandusky, O., under the style Lake Shore Tire Co., have taken on automobiles; they have secured the Packard agency and will establish salesrooms in the garage on Hancock

I. F. Timmons, of Wyoming, Ill., has become a dealer, having secured the Star county Buick agency as a sub-dealer under the Henry Auto Co., of Henry, in the same State. Timmons already was the proprietor of a garage and machine-

The Durand Auto Co. has been formed in Durand, Mich. The officers are: President, E. Henry; treasurer, A. E. Van Slyke; manager, M. Donnelly. It will build a garage and salesrooms and handle Ford, Oakland and Overland cars.

Robert C. Crowthers, who was the Elmore dealer in Cincinnati for eight or nine years, has again entered the trade, this time as distributer of Lexingtons and Howards; he is located at 1815-23 Reading road.

The Tacoma Auto Top & Trimming Co. has entered the trade in Tacoma. Wash., at 924 Tacoma avenue; it will specialize in making and repairing tops, seat covers, upholstery, etc. F. L. Johnson is manager.

W. N. Barrett, formerly connected with the Packard agency in Boston, has entered the trade in Hartford, Conn., as a Metz dealer; he is located temporarily at the Cole service station, 87 Mulberry

The Hamp Williams Hardware Co., of Hot Springs, Ark., which is widely known in that part of the South, will add cars and accessories in April; it will take possession of a new store at that time.

The Macdonald Garage Co. has been formed in Schenectady, N. Y., by A. D. Atwood and others; it has a capital stock of \$18,000 and will operate a garage and automobile livery and deal in cars.

O. M. Graham, formerly of Huntsville. Ala., has been made Moon distributer in Tennessee, Mississippi, Alabama, Georgia and Florida; he will make his headquarters in Birmingham, Ala.

Menkins & Coughlin have entered the trade in Philadelphia; they have opened an electrical repair-shop at 1416 Vinestreet and will specialize in the care and repair of magnetos.

Thomas Newman, of 22 Pinnacle road, Rochester, N. Y., has secured permission to erect a concrete garage, 55 x 130 feet, on Scio street, near Charlotte; it will cost \$12,000.

Benjamin Smith and Ernest Woodman are about to enter the garage trade in Fairfield, Me. They have leased a site and are erecting a building for their business.

F. P. Tregashes, proprietor of a Mesa: (Ark.) blacksmith shop, is about to branch out into the garage trade; he is erecting a new building for the pur-

Louis H. and Samuel Frankenheimer. of Stockton, Cal., have secured plans for a new garage which will be erected on El Dorado street; it will cost \$25,000.

H. M. LeBarron, of Valley Ford, Cal., has purchased the Boulevard Garage in-Santa Rosa, Cal. It formerly was: owned by Baisdon & DeLatimer.

W. J. Damoth has purchased the garage of Edwin Mosher in Grand Rapids, Mich. It is located at Lake street and Diamond avenue, southeast.

Huhn & Magee, of Glendora, Cal., have sold the Central Garage to T. S. De Weese; the latter has taken charge and will operate it.

Bierschwale & Co. are erecting a garage in Comfort, Tex., where hitherto was conducted a horse livery business.

Foiles Garage is the style of a new business in De Kalb, Ill. A new building was erected for the business.

George H. Wike and Edward Keller have entered the trade in Barry, Ill. They will handle Maxwells.

G. S. Wicks, of Baltimore, Md., is about to build a garage; it will stand on West North avenue.

William J. Payne, of Pittsburgh, is about to erect a garage on Allen street; it will cost \$8,000.

O. L. Unkefer, of Fillmore, Cal., has purchased the garage of John Opsahal; he will operate it.

The Great West Motor Car Co. has been formed in Winnipeg, Man. It will handle Krit cars.

F. A. Storer, of Cambridge, Mass., plans to erect a garage; the site is at 35 West street.

D. L. Bronson has become a dealer in Oxford, Mich. He has the Maxwell agency.

Stephen Wright, of Stanford, Ill., has become a dealer; he has the Overland agency.

The Cole Motor Co. has been organized in Los Angeles; it will handle Cole cars.

Graham & Seale, of Lebanon, Tenn., are erecting a garage and repair-shop.

Charles Clyne, of Benica, Cal., has sold his garage to Lawrence E. Fish & Co.

A new garage is being erected in Mount Pleasant, Pa., for D. F. Gruber.

W. M. Bigelow, of Salem, Mass., has secured permission to erect a garage.

Frank and Herbert Cottrell, of Browntown, N. J., are erecting a garage.

#### Recent Losses by Fire.

Daytona, Fla.—Auto Supply Co., Orange street; garage damaged. Loss not stated.

Portland, Ore.—Gillans & Chambers, 541 Albina avenue; repair-shop damaged. Loss, \$1,500.

Torrington Conn.—Coe Brass Co.; garage damaged by gasolene explosion. Loss not stated.

Monroe, Wis.—Karlem Garage and Monroe Mfg. Co.; garage and wagon factory destroyed. Loss \$125,000.

Clemson College, S. C.—Clinkscales & Crowthers; livery stable, garage and contents destroyed. Loss not stated.

#### WHITE AND WHITE DEALER END FOUR-COURT PURSUIT

Long Litigation Ended in Favor of Manufacturer—Dealer Must Pay Notes of \$4,200—Where the Legal Chase Led.

After having played tag through four courts the White Co., of Cleveland, O., and the White Motor Co., a former White dealer in Brooklyn, N. Y.. have come to the end, or at least it looks like the end. And at the end it is the White Co., of Cleveland, which has won out, having been given a judgment of \$5,242.13 against the White Motor Co. and Philip S. Saitta. Judgment was filed this week with the New York county clerk.

The suit was over notes given by the dealer and endorsed by Saitta. They were for approximataely \$4,200, and when payment was refused the White Co. sued in the New York City Court and was given a verdict for the full amount. The dealer then asked the Appellate Term of the Supreme Court if \$2,000 was not the City Court's jurisdiction in suits. The Appellate Term said it was, so the case was started all over again in the Supreme Court for New York county.

On this trial the dealer interposed a counterclaim of \$50,000 as commissions on cars sold in its territory and was allowed \$3,000, making the manufacturer's verdict but \$1,244.94. The White Co. then went to the Appellate Division to make a kick about that \$3,000 allowance and made good, the \$3,000 being disallowed and the verdict given in full. The only court left to visit is the Court of Appeals, and that is regarded as some jump in suits of this size.

#### Minor Business Embarrassments.

A voluntary petition in bankruptcy has been filed by F. L. Reichard, an automobile dealer of Lexington, Ky. His liabilities amount to \$2,283.83 and the assets to \$1,212.97.

John O. Speer, an automobile dealer of Ogdensburg, N. Y., has filed a petition in bankruptcy, scheduling liabilities of \$9,637 and assets of \$1,050, part of which is in the shape of an interest in a horse valued at \$800. Of the liabilities \$7.637 is unsecured.

Following the filing of a petition in bankruptcy by creditors of the Electro Light & Starter Co., of Indianapolis, Ind., Fred I. Tone has been appointed receiver. The petitioning creditors were the United States Light & Heating Co., New York, whose claim was \$4.302.90:

the J. S. Bretz Co., New York, \$7,025.20, and S. C. Niman, Indianapolis, \$2,130.

H. H. Hanna, at one time head of the Atlas Engine Works, of Indianapolis, on Monday last filed a personal petition in bankruptcy in the Federal Court in that city. He listed liabilities of \$1,210,275 and assets of \$1,080. Practically all of the liabilities consisted of money borrowed on his personal notes for the Atlas company. The latter was sold about a year ago and is now in new hands.

Hopes that removal from Pennsylvania to Michigan would bring elusive fortune to the doors of Charles E. Duryea, one of the genuine automobile pioneers, have proved vain, his Michigan venture, the Duryea Motor Co., of Saginaw, having been forced to file a voluntary petition in bankruptcy. Its assets are placed at \$9,191 and liabilities at \$19,415. Duryea went from Reading, Pa., to Saginaw about three years ago, when he acquired an interest in the Brooks Motor Car Co., but, disagreements soon arising, the company split up and Duryea formed the company which has just struck the financial shoals. He himself has returned to Pennsylvania where, as some of those whe know him predicted, he is developing a cyclecar.

#### Two Cross the Great Divide.

Samuel J. Morris, vice-president of the Standard Motor Car Co., of Columbus. O., is dead as the result of heart failure. His death came suddenly while on a hunting trip in Alabama. He was 46 years of age.

Alden M. Blake, a district manager for the Willys-Overland Co., died suddenly last week in Maryville, Mo., while on a business trip. Heart disease was the cause of his death. Blake, who was 37 years old, and a resident of Kansas City, leaves a widow and four sons.

#### Klaxon Horn Sues Schenectady Man.

The Lovell-McConnell Mfg. Co., of Newark, N. J., maker of Klaxon horns, filed suit this week in the Supreme Court for New York county against J. V. Magec. of Schenectady, N. Y. It is charged that between November 24 and 29, 1913, he was supplied with and has failed to pay for goods to the value of \$70.

#### Edge is Locomobile Factory Manager.

H. H. Edge, who for the past two years and a half has been superintendent of the Locomobile Co. of America, of Bridgeport, Conn., has been promoted to the post of factory manager. He succeeds to the vacancy caused by the resignation of E. F. Russell.



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Contributions concerning any subject of automobile interest are invited and, if adequate, will be paid for; or, if unavailable, will be returned provided they are accompanied by return postage.

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#### ACCESSIBILITY IN MEN, NOT CARS.

That divinity which doth hedge a king may be perfectly proper so far as concerns royalty, but just why divinity, or anything else, should so thickly hedge many, even of the less important personages, in the automobile industry, often has been a subject for remark.

It is not to be expected that important business men will be accessible to all comers, but it is certain that some of them, at least, have placed themselves upon a throne, so to speak, and approach to them is almost as difficult as to even the truly royal person. Their inaccessibility is not short of remarkable. How it operates is well instanced by the interview with a member of the trade—himself a manufacturer of no small importance—which is printed in another column.

Departmentizing is essential to the proper conduct of any business, but when it suggests bureaucracy, as is the case in many automobile establishments, it not only fails of its purpose but is an obstacle to real progress, to say nothing of the good-will which it alienates. It is frequently the case that factory principals or factory managers who find fault with their

branch managers, and lay the trouble to the inaccessibility of the latter, are themselves even guiltier of the offense.

Discretion must be exercised in all things, but the man who is too important to see other than "big people" is beyond the pale. For the man who is eternally "too busy" to see any other sort, there is hope. For the "too busy" excuse merely is a form of self-deception than which nothing is commoner in commercial life.

If more of the inaccessible principals and department heads in the automobile business realized the valuation which they themselves place on others similarly situated, who hold them or their representative aloof, many of the unnecessary barriers which they have placed in the path to their own doors would be quickly removed. It is rather remarkable that so many of them fail to recognize how this truth cuts in two directions.

If accessibility in a car is a desirable feature—and there is no doubt about it—accessibility in a man should be at least equally valuable.

#### EFFECT OF POPULAR-PRICED ELECTRIC.

If there were doubts that a demand exists for a popular-priced electric car, they have been quite effectually removed since Henry Ford's intention to build a vehicle of that sort was made public. Whenever men and women congregate, and the subject is discussed, the opinions let fall make quite clear the truth of what Motor World several times has contended—i. e., that it required but quantity production, and the price made possible thereby, to prove that the demand for such a vehicle is very real and very large.

Of course, Ford's electric is at least a year removed and, therefore, will cut no figure in the market of the present day, but it is not too early to consider the effect it is likely to have in other directions.

Quite apart from the demand for certain accessories which must arise, the appearance of a popular-priced car will undoubtedly greatly stimulate the call and need for charging apparatus. Among other things, it will impress on the central stations their laxity in encouraging this form of patronage. Even with such electric vehicles as are in use, and in spite of many efforts to arouse them, the central station people have displayed but lukewarm interest, but with the great expansion of patronage in prospect they cannot remain insensible to what really may be termed one of their duties.

Apart from the attitude of these central stations, the garageman, wherever located, must similarly sharpen his interest. The sale of electric current is akin to the sale of gasolene and no garageman can afford to overlook such business. While he may have to depend upon central stations for current, he will do well, therefore, to take a step in advance of the popular-priced electric itself by familiarizing himself with such things and studying the application and the costs thereof.

#### **CINCINNATI DOCTORS AND NUTMEG "REBEL" IN TOUCH**

"Mad and Won't Play" Element May Form Body to Oppose A. A. A. - Bolters Take Themselves Seriously.

The withdrawal of the Connecticut State Automobile Association from the A. A. A. has caused little more than a ripple. It is understood that it was brought about chiefly through the efforts of Charles M. Robinson, secretary of the State association, who, according to indications, has ambitions which have not been satisfied. Another State organizatiton, which will affiliate with the A. A. A., is in process of organization.

That Robinson is in close touch with the Cincinnati discontents, who long have been disturbing factors in the A. A. A., is indicated by the fact that immediately the Connecticut association had withdrawn he wrote "My dear Doctor" -none other than Dr. A. B. Heyl, at whom the cry "traitor" was hurled at the recent A. A. A. annual meeting and who later was displaced as a director-advising him that the Connecticut body had withdrawn and bidding him to "go and do likewise."

Not because of his bidding, but evidently because of its chronic condition, the Cincinnati Automobile Club, of which Dr. Heyl and the other doctor-Bonifield are the dominating spirits, voted to withdraw from the Ohio association and consequently from the A. A. A., and Dr. Bonifield in due course issued one of his long statements.

There are indications that having assumed the "we're mad and won't play" attitude the Cincinnati physicians and Robinson have concealed about their persons an intention, or desire, to create a national organization which will attempt to perform the usual act of "putting the A. A. A. out of business."

#### Ohio's Governor Changes His Tune.

Having been soundly "walloped" by the Ohio State Automobile Association in his efforts to "put over" the obnoxious Warnes law, which imposed a heavy tax on automobiles, Governor Cox has succeeded in getting the motorists to listen to arbitration, and a new law is being prepared; a conference on the matter was held in his office in Columbus on Monday of this week at which the new bill was considered.

As now proposed, it will bring \$400,000 less a year into the revenue coffers and





Jan. 19-24, Washington, D. C .- Automobile Dealers' Association's show in Convention Hall.

Jan. 20-24, Baltimore, Md.-Baltimore Automobile Dealers' Association's show in the Fifth Regiment Armory.

Jan. 24-31, Montreal, P. O.-Montreal Automobile Trade Association's pleasure vehicle show.

Jan. 24-31. Rochester, N. Y .- Rochester Automobile Dealers' Association's annual show in Exposition Park.

Jan. 24-31, Chicago, Ill.—Automobile Chamber of Commerce's national automobile show in the Coliseum and First Regiment Armory.

Jan. 26-31, Scranton, Pa.-Automobile show in the State Armory.

Jan. 31-Feb. 7, Minneapolis, Minn .--Minneapolis Automobile Trade Associations' seventh annual show in National Guard armory.

Feb. 2-7, Buffalo, N. Y.-Buffalo Automobile Dealers' Association's pleasure vehicle show.

Feb. 3-7, Montreal, P. Q.-Montreal Automobile Trade Association's commercial vehicle show.

Feb. 3-7, Kalamazoo, Mich.-Kalamazoo Automobile Dealers' Association's fifth annual show in the State Armory.

Feb. 4-7, St. Joseph, Mo.-St. Joseph Automobile Show Association's Show.

Feb. 7-12, Seattle, Wash. - Annual show in the State Armory.

Feb. 7-14, Cincinnati, O.-Automobile Trade Association's show in Union Central Life Building.

Feb. 9-14, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's commercial vehicle show.

Feb. 14-21, Pittsburgh, Pa.-Pittsburgh Automobile Show Association's show in Exposition Hall.

Feb. 16-21, Kansas City, Mo.-Annual show.

Feb. 16-21, Toronto, Ont.-Toronto Automobile Trade Association's 10th annual show in Transportation and Horticultural Buildings.

Feb. 17-21, Salt Lake City, Utah-Annual show in the Keith-O'Brien building.

Feb. 18-21. Bloomington, Ill.-McLean County Automobile Club's show.

Feb. 21-28, Newark, N. J.-New Jersey Automobile Trade Co.'s show.

Feb. 21, Los Angeles, Cal.-Vanderbilt road race under auspices of the Western Automobile Association over Santa Monica course.

Feb. 21-March 4, Cincinnati, O.-Automobile Dealers' Association's show in the Music Hall

Feb. 22-March 1, Hartford, Conn .-Automobile Dealers' Association's show in Park Casino.

Feb. 23, Los Angeles, Cal.-Grand Prize road race under auspices of Western Automobile Association over Santa Monica course.

Feb. 23-28, Omaha, Neb.—Omaha Automobile Show Association's annual show

March 2, 3, 4, Cincinnati, O.-Automobile Dealers' Association's commercial vehicle show in Music Hall.

March 3-7, Fort Dodge, Ia.-Fort Dodge Dealers' Association's third annual show in the State Armory.

March 7-14, Boston, Mass.-Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics' Building.

March 9-14, Des Moines, Ia.-Automobile Dealers' Association's annual show.

March 17-21, Boston, Mass.-Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics' Building.

all the money will go into road building and improvement, wherefore it is expected that car owners will not oppose the measure. This was not a feature of the Warnes law.

The new bill provides a tax of \$5 for cars less than 30 horsepower, \$6 for cars between 30 and 40, \$7 for cars between 40 and 50, \$8 for cars between 50 and 60 and \$10 for all above 60 horsepower. In the old bill the fees ranged from \$6 to \$18. Dealers will pay \$15 instead of \$20, as the Warnes law provided.

Switzerland's Motoring Population.

According to official statistics just published, there were 4,665 automobiles and 751 trucks in Switzerland on April 30th last. Of the number, 1,132 cars and 32 trucks were in use in Geneva, and 816 cars and 212 trucks in Zurich. Remarkable to relate, however, motorcycles in the mountain-bound republic outnumber the cars, there being 4,954 of the little two-wheelers. Of the cars, 52.9 per cent. were equipped with motors of from 11 to 20 horsepower.

#### SALESROOM DISPLAY THAT BLOCKED STREETS

## Moving Car in Window of Studebaker Detroit Branch Draws Such a Crowd That Police Are Compelled to Disperse It—Manager McLuney's Idea and It's Results—How Car Was Moved.

When an automobile dealer gets up such an attractive window display that crowds block the street in an effort to see it and then stand glued to the spot until dispersed by a traffic policeman, he has done something.

When, in addition to this, the exhibit makes automobiles pause and line up on both sides of the street, it begins to assume importance. And when, on top of this, the people in an apartment hotel opposite throng the windows and, instead of playing cards and doing the other things they are accustomed to do. spend their evening watching the display and speculating on how it is accomplished, it begins to loom big. Again, a display that can cause the motorman on a main line with just two minutes between cars, so far to forget himself that he deliberately holds the car for exactly two minutes before he comes back to earth, instantly assumes the proportions of a genuine, dyed-in-the-wool, doublewidth triumph.

That is exactly what took place and is taking place in connection with a window display originated by A. K. Mc-Luney, manager of the Detroit branch of the Studebaker corporation, situated on the corner of Woodward and Charlotte avenues at Detroit, Mich.

#### Car That Ran by Itself.

There is nothing about the display that any other dealer as fortunately located and with as large a salesroom cannot duplicate. And yet, McLuney was the first one to think of it and work it out, and in spite of the big effect, the cost is amazingly little. To be exact, McLuney's total expenditure was and is \$466

The idea is so simple and so compelling that one wonders why no one thought of it and employed it before. It combines the two elements of an ideal window display—namely, an accurate and interesting showing of the goods in action.

"What! An automobile in action in a showroom? A car actually running?" you say. Yes, that is nothing more or less than what McLuney actually accomplished.

"How did he do it? And exactly what did he do?"

To be precise and record events in order, the first thing he did was to order a florist to decorate the showroom with palms and other green potted plants, which was done very acceptably. This made an unusual and pleasing background for what was to follow. The next move was to clear the center of the floor of all cars except a Studebaker "25." This car was then placed so that, turning in a circle, it would make a complete circuit of the side and front windows and round a big pillar. The steering rod was set permanently in the right position and, with two extra storage batteries carried in the tonneau and a knife switch added, everything was ready for the stunt.

#### Simplicity of the Display.

As soon as it was dark all the lights on the car were flashed on, the Wagner electric starter was turned on with the switch to the batteries operating it, and the moving window display that captured the attention of so any thousand people and has been the talk of Detroit dealers and motorists for a week was on. The car moves slowly in a circle and naturally it kept going in exactly the same track. It could not change because the steering rod was tied. On it kept going round and round in a circle, steered as if by human hands, and there was no perceptible noise-no wires connecting it with anything outside. What was doing it? The people wondered. Some, moved by the gambling spirit ever present in a crowd, made bets on the motive power. There was interest of the keenest sort. The back of the tonneau bore a card reading "Studebaker '25,' \$1050-Come in and see the complete line."

With lights flashing out into the street and the car moving round a pillar, disappearing for an instant, by a silent, invisible power, it was no wonder that the crowd gathered. And the display accomplished precisely the same thing that the turntable display described in a recent issue of Motor World achieved. It awakened fresh interest, caused no end of talk, and brought in prospects.

The exhibit was kept up for three hours and a half each evening without changing batteries.

It lasted the entire week during Detroit's automobile show and served to single out the Studebaker establishment to visitors passing to the show at night; and it also made visiting dealers of the Studebaker branch feel proud of being connected with an establishment that could pull off a stunt so live, so different and so attractive.

Do your windows look the same all the time? Don't be satisfied with them if they do. Try something different. Perhaps you can work this stunt. Perhaps some other idea just as practical may suggest itself to you. If it does, write to Motor World and tell about it.

#### Dayton Dealers Reorganize Association.

The Dayton Automobile Association, which had not been over-active for some time, was reorganized last week, and that it may keep in step with the civic life of the city a committee was named to cooperate with the Greater Dayton Association, especially in the matter of securing the passage of up-to-date traffic ordinances.

The officers elected were: President, E. C. Kinsey; vice-president, Joseph A. McKenny; secretary-treasurer, L. J. Haughey. A club house between Dayton and Springfield is proposed. Members of the association who are not members of the Greater Dayton Association will join the latter body and meetings of the dealers will be held in the major organization's rooms.

#### Owner Sues Dealer-Dealer Sues Owner.

Dr. M. H. Krebs, of Huntington, Ind., says the Randall Automobile Co., of Fort Wayne, misrepresented matters when it sold him a Chalmers car. and he demands a rescission of the contract in a suit in circuit court. The Randall Automobile Co. says the doctor is unlawfully holding the car in question and has instituted a replevin action for the return of the car, valued at \$2,000. The papers in the case indicate that there is dissatisfaction on both sides and the court is asked to untangle the situation.



#### PAYING PRICE OF SUCCESS

Like Everything Else, Result Has Its
Cost—Find What It Is, Then Decide
Whether You Want to Pay It—
No Two Prices Alike.

Are you willing to pay the price? There is no other way of getting what you want. So if you desire anything very much, so much that you really want it with a great, big want, you must immediately and at once face the question, "Am I willing to pay the price?"

The desire to have money is universal. But, aside from the accidentals, only those who are willing to pay the price in countless sacrifices ever get money. The price is never the same to any two persons; the price varies just as faces vary—no two alike. Thus no one can name the price for you. You must toil and study and find out, and know what your price is before you can honestly agree to pay it.

Everybody, in a broad, general sort of way, hopes for success in business. But only the man who can sacrifice the time to study and analyze and compare and who by constant practice and continuous striving has trained his mind to perceive the essentials and then is willing to pay the price in sacrifice of many things that his soul loves really attains it. And what is success? To no two is the answer precisely the same. Gerald Stanley Lee says "Success is the science of being believed in." That is his definition and, commercially speaking, it is a good one.

The more people who believe in you the greater your business—and the greater your business the larger your volume of profit. Seems quite logical, doesn't it? Worth thinking over, is it not? Worth trying to get clearly in your mind what form your success is to be. For how can you learn the price if you don't know

what it is you are trying to buy? This isn't a sermon, nor is it an attempt to philosophize. It is just a suggestion to dealers, salesmen and others to get clearly in mind what they are working for, so they may learn the price and he prepared to pay it.

#### ARRIVING AT PROPER BASIS FOR A SEASON'S SALES

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Guesswork must be relegated to the background in business today. How many automobiles will you sell this year? How many should you sell? How can you find out? Get the facts in your territory. Study the consumption during the past year. Study conditions.

It is easy to get a list of all registrations in your State. From this you can compile the figures for your territory, that will give you a basis. A study of the per capita wealth, the population, the bank deposits and analysis of what has been done in the past will all yield fruitful information. Get as near to the actual facts as you can and then, without obligating yourself beyond the facts. make your plans to beat the facts.

#### MAKING HOTEL HELP BRING TOURISTS TO THE GARAGE

If the motor car tourist is to stop in a town on his overland trip he must put up at a hotel, also at a garage; and acting upon this theory the Barringer Garage Co.. of Charlotte, N. C., carries advertising of the Mecklenburg Hotel on a line of postal card advertising it is sending out in advance for the spring season; or it may be that the hotel is carrying the Barringer ad.

At any rate, the neatly designed card carries on the correspondence space on the obverse side this description of the garage: "Located on National Highway, corner 8th and Tryon streets, four blocks from Independence Square. Official Blue

Book Station, Touring Club of America. Special attention given to touring parties. Ladies' rest room in connection. Cars called for and delivered. It is getting to be a habit for all parties touring the South to 'Ask Ballinger.'"

On the reverse side is a three-color reproduction of the Mecklenburg Hotel with the statement that it has 100 rooms, elevator service, day and night cafe and is "Good enough for everybody. Not too good for anybody." These cards are furnished free for mailing to any who desire them and they also serve for circularizing a list of prospective tourists. They tell the tourist of the accommodations that await him and his car, too.

#### ONE DEALER'S WAY OF SEEKING OUT PROSPECTS

There are a thousand different ways of getting "prospects." Every man has his own way. Every dealer his own method. One live merchant who is not the least bit afraid to use the mails finds that a letter sent every once in a while to his customers enclosing a blank and promising that the information will be held in strict confidence, brings the names of many who otherwise would never be heard from. Of course, the return envelope is properly stamped and addressed so that it is easy for the reply to come back with little trouble and no expense on the part of the customer.

#### Gauging Others by Oneself.

Be fair. One of the most hopeful things in the world is that men change. Characters change. Opinions change. What a man was, what he thought yesterday he may not be and may not think today. A line in a book, a new thought, and we are on the way to higher ideals, better deeds. It is so with us. Why not with others? Let's give them the benefit of the doubt.



#### WHEN TO EMPLOY FIRMNESS

Successful Method of One Dealer in Keeping a Car "Sold"—Unwise Concessions of the Sort that Jeopardize Success.

There are two sides to every sale, as there are two obligations with every right form of contract. This fact is frequently overlooked; and the overlooking is just as apt to be done by the buyer as by the seller. Also in a great many cases salesmen have been known to forget entirely the rights of their employers and themselves in the matter and yield blindly to the wishes of the customer without giving due consideration to their own equities.

This latter type of salesman is very common; and he is often very successful. His sole fault is frequently the one mentioned - namely, the tendency to meet the desires of the customer on every possible occasion. Often a firm stand on an important matter where he has easily recognizable rights will establish a respect that means more for his future success with the buyer than a reluctant and unwise concession. There is a large class of buyers who want to cancel the minute the salesman gets out of sight, and for no other reason than that they are constitutionally weak-kneed. Polite firmness will do more to keep these buyers within reasonable limits than any other method.

#### Saving a Cancelled Contract.

Accompanied by his sales manager, a salesman called on a buyer of the type referred to and booked an order. Three days afterwards the buyer called up and cancelled the order. The salesman was sent out to have it reinstated. He was not successful. Asked what he had said to the merchant, he stated that he had said that "they were very sorry to

get his cancellation." "Hell!" exclaimed the sales manager as he reached for his hat and overcoat, and in a few minutes he was having a heated session with the merchant. He told him that they considered his order as good as his check; that they had forwarded it to the factory and the cars were on the way; they meant he should take them; they were not in business for fun and they did not think he was, and they expected him to take the cars exactly as agreed. He did take them, and has taken a great many more since.

### BUILDING ON HOPES VS. BUILDING ON COLD FACTS

"Don't be deceived by temporary prosperity. In other words, don't bite off more than you can chew." Many men have done that particular thing and done it without rhyme or reason except a temporary and very flimsy sort of prosperity."

#### "Velvet" That Did Not Appear.

The wisdom enunciated comes from the man-who-knows-through-having-been-there. It is based on the experience of moving from a \$40-a-month rent to one of \$250 a month. It comprehends a long and anxious period during which earnings dropped to a marvellously small maximum, and all because the rent was very much larger than the regular volume of business warranted. The rent was paid—but salaries of the owners languished to the vanishing point. Eight months sufficed to indicate that the less money you have the less people want to do business with you.

And this garageman had it all figured out that rental space would more than cover rent charges and profits on repair work would be "velvet." He confessed his analysis was not made with pencil and paper and that his optimism overbalanced his judgment. He is building

his present and his future on facts and at a very much lower rent. Meanwhile he wishes he had used pencil and paper and reduced matters to figures before he burned up his money.

Lots of others have been through the same experience. Still others have it to go through. The idea is to "look before you leap" and look at the figures as they are, not at what you hope they will be. If you please, discount them a little. Don't be afraid to make a move for the better, but—reckon with facts!

### METHODS OF ELIMINATING DISSATISFIED CUSTOMERS

If you say a thing often enough you begin to believe it; but, that doesn't make it true. And the real salesman knows that the only incontrovertible thing is truth. Before you get wedded to a lie that is in any form a misrepresentation, forget it. Don't fancy that all customers are satisfied simply because you have said so a great many times; find out; ask them; look into their complaints. Fix them up, if it is your fault. If it is theirs, diplomatically tell them so and show them how to overcome the trouble. But don't have dissatisfied customers if you can help it—and you can.

### DISPLAYING NON-SKID TIRES TO SEASONABLE ADVANTAGE

The Detroit branch of the Firestone Tire & Rubber Co. is showing a timely and effective non-skid window display. It consists of a deep snow effect background made of pure white cotton wool, showing two non-skid tires in action and a single black bar at the rear of the window bearing the Firestone trade-mark. The suggestion is too obvious to require comment. It is but one of a series of effective displays that has marked the conduct of that particular Firestone branch.

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## BARRIERS THAT BLOCK THE WAY OF BUSINESS CALLERS

One Who Has Called Often Discusses Inaccessibility of Men in Automobile Factories—
Some of the Effects.

"While discussing changes that are coming over the automobile industry, why don't you say something about one feature of it that ought to have changed long ago? I mean the inaccessibility of not merely factory principals but of many of the department heads."

The man who let fall this statement is no stranger to the trade, but is one who manufactures a small but important article going in the actual make-up of motor vehicles and who produces it on a large scale.

"It is a fact," he went on, in response to inquiries, "that it is as hard to reach some heads of departments as it is to reach the President of the United States. Of course, I know well enough that the executive heads of large institutions cannot be expected to receive more than a small proportion of those who call, but why the department heads should be surrounded by hurdles and other barriers, and so generally hold themselves aloof, is something I cannot understand. We have been doing business for many years with railroads and the differences between the railway officials and automobile officials is remarkable, to put it mildly.

"Take our own case: For years we have been trying to get past the purchasing agents of most of the automobile factories, but the effort is almost equivalent to running against a stone wall. We haven't sought to reach the president or the treasurer, but have merely endeavored to obtain audience with the engineers.

"For some reason or other, we are not permitted to approach them. The buyer or purchasing agent listens to us, but the buyer really understands only the language of price. This is true of too many of even the biggest and best known automobiles manufactured in this country. The buyer is interested only in figures and in purchasing to the very best advantage, which means at the very lowest price. To him all other considerations are secondary, even the quality and efficiency of the goods or the responsibility of those who produce them.

"Although our company is long and well established, and though at our plant we have apparatus that will absolutely prove the superior efficiency of our wares, these things are of no interest to the buyer. With him it is price! price! price! and, as a result, we are forced to compete chiefly with a comparatively small fly-by-might manufacturer who has failed a couple of times and whose goods we could prove it gives the

failed a couple of times and whose goods we could prove, if given the opportunity, are not in the same class with ours; but we cannot get past the buyer; everybody above his station is absolutely inaccessible, and our every appeal to be permitted to present our case, even to the en-

gineers, has proved vain.

"There are mighty few automobile companies of which this is not true. The Cadillac is one of them, and whether that policy is one of the reasons for the greatness of the Cadillac institution and the Cadillac car is a pretty question that every manufacturer of automobiles might take to heart."

#### Find Fence for \$50,000 Stolen Cars.

In the arrest of three chauffeurs and a New Jersey garageman the New York police believe they have broken up a gang and "fence" which have stolen \$50,000 worth of Packard cars in the metropolis during the last 12 months; the cars, it is stated, were sold to a John Gargare, a Lakewood garageman, for \$300 each, and he generally directed their theft. The chauffeurs-John Chandler, Chester Travis and Daniel Reilly-were arrested following the apprehension of Reilly one night in Elizabeth, where he was on his way to break a safe. He was arrested for driving a car without lights and was held because burglar's tools were found in his possession; later he confessed. John Walsh, an oldtime "yegg." also is held as a member of the gang. Aside from the Packards stolen in New York, one Pierce-Arrow was purloined in Philadelphia, this being the only car not a Packard.

#### "Membership" Seller Lands in Jail.

Roy E. Weaver, who claimed to be a representative of the United Auto Accessory Co., of Cleveland. was arrested in Indianapolis on Monday last on a nominal charge of loitering. He was held in default of \$1,000 bail. Weaver has an office in the Knights of Pythias Building in Indianapolis and apparently was engaged in promoting one of those cooperative schemes which have proved more or less popular and profitable. He sought to sell stock for "memberships" in the United Auto Accessory Co. and to assist him employed solicitors who were promised \$25 a week for their services, the "members" in turn being promised accessories at cost.

#### CHAUFFEUR ON \$10 A WEEK SUED FOR STORAGE OF CAR

Denies He Contracted for Garaging of His Employer-Brother-in-Law's Automobile—Receivis Named for Him.

Herman Ost, of New York City, claims that a chauffeur who gets but \$10 a week and has to pay \$23 a month rent is in no position to pay storage charges on an automobile. Most people will agree with him, but the Normal Automobile Station, which maintains a garage on West 124th street, is trying to collect \$69.02 storage on a car which Ost drove. The assertion by Ost that he doesn't own the car did not prevent the garage owner having a receiver appointed for Ost this week in the New York City Court.

Ost says he is chauffeur for his brother-in-law, Samuel K. Flaum, and has no income beyond the "ten bones per" which he receives for driving the Flaum car; the car was garaged in the Normal establishment, but Ost insists that he did not garage it under his own name. However, the garage sued in Municipal Court and secured the judgment for storage against the chauffeur, apparently on the basis that he stored the car in his own name.

When he failed to pay he was haled to City Court and this week was examined in supplementary proceedings to ascertain whether he had means of paying the judgment; as to means, he said his purse was as dry as a frozen piston and in the course of the examination he was compelled, according to legal procedure, to answer questions which revealed that he owns no car himself, has no watch or jewelry, owns no real estate and has no investment in stocks or bonds.

After Ost had told how much he didn't have, the examination was adjourned to February 3 at 2 P. M. to permit the examination of other witnesses and to ascertain whether Ost is being rightly held for the debt.

#### Smith Acquires Plant in Paterson.

The H. Lund Smith Co., of Paterson. N. J., manufacturers of windshields, tops and other equipment, has purchased the plant of the Paterson Mfg. Co., of that city. The latter concern manufactures leather and fabric novelties and the acquirement of the plant will permit the Smith company to produce slip covers, hood and tire covers and similar specialties.

## PICKING UP A MILLION PENNIES BY. THE ROAD

## Garageman and Accessory Dealer Who Has Built Up \$10,000 Stock From "Shoestring" Start—Passing Trade His Greatest Revenue—Merchandizing Methods That Made His Business Grow.

Four years ago last September Norman M. Brickner didn't have a cent; he could not even buy shoes for the "kids," he himself admits.

Today he has a thriving garage and a supply and accessory store at Broadway and 216th street, New York City, with a stock worth more than \$10,000. And

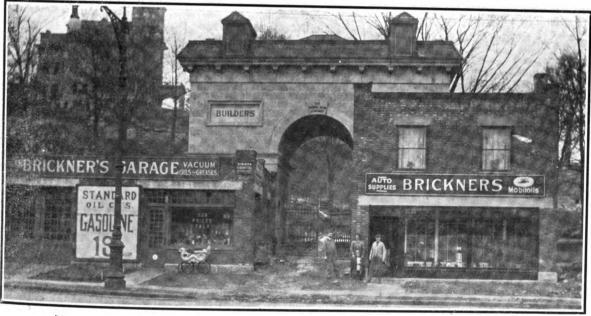
are larger and more pretentious competitors at both ends.

The section is comparatively sparsely settled.

It is not a car-owning neighborhood. Gasolene may sell, but not accessories.

These reasons are like those of a lawyer who went into a cell to see a prisevery sort and variety, from gaskets to fur coats, and Brickner states that the percentage of customers he has to turn away is extremely small; he placed it at 5 per cent. and then said that was too large.

Fur coats look out of place to the casual observer; the natural first thought



BRICKNER'S GARAGE AND SUPPLY STORE WHICH GREW FROM A TINY "GASOLENE STATION"

nearly every cent of the \$10,000 was made "picking up pennies by the roadside." Furthermore, the stock is paid for; Brickner owes no man and no one owes him.

Not only has the business been developed from the merest shoestring, but the development has been in a location which might have deterred many another man; before Brickner opened up four years ago there seemed reasons a-plenty why he should fail. In fact, several competitors have started and failed in that section since Brickner opened up. The reasons are:

The cars which pass the door daily are numbered by hundreds—but passing trade won't support a garage and supply store.

He is located midway between lower New York City and Yonkers—but there oner client. The prisoner told the lawyer what he had done.

"Why, they can't lock you up for that," said the lawyer.

"But they did!" exclaimed the prisoner.
"But they can't!" asserted the attor-

"Well, damn it! I'm here, ain't I?" shrieked the man in the cell.

And so it is in Brickner's case; there are the reasons he could not have succeeded, but with trade as good as it is he has no time to worry about the reasons.

Located as he is, where practically his entire livelihood must be derived from the cars that pass his door, the stock he carries has a dubious appearance to the man who does not understand the business; it seems to be too heavy a stock for such a location. The goods are of

is that the man who wants to buy a fur coat would buy it in New York or Yonkers and not half way between, buf Brickner carries them and sells them. He also has women's and men's sweaters. clocks, hammers, horns, cleaning materials, gauges, accelerator pedals, dome lights, fire extinguishers, safety switches. scarfs, road maps, books on car construction, flash lamps, linen dusters, cigars, cigarettes, tobacco, chewing gum and many more things that one would not expect to find in a wayside store that depended on passing trade. The things enumerated are but a part of the list: to complete it, just imagine anything that Brickner might not be expected to carry and it's ten to one he has it.

All this may sound unusual; it is. But when it is stated that Brickner, with a stock as complete as that in most big

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city supply stores, can undersell the big city men and still make profits ranging from anything up to 16,000 per cent. it is about time to make a few explanations.

What's that? Brickner a "fence"! No, merely a good little merchandizer, one of the kind that is likely to survive when the weeding out of the least fit is completed. The whole secret is best expressed in his own words, "I make my profit when I buy. Anybody can sell."

In other words, he is one of the closest buyers in the business; if there is a bargain in supplies Brickner is there; if there is an auction of anything he might need, he is there, and if the goods are right and can be bought right he buys—otherwise he does not buy. Some of the money he invests in stock may not be turned over every six months, but he can afford to let it lie on the shelves.

#### Made a Profit of 15,900 per Cent.

One day he went to a sale and bid five cents on a half dozen composition steering wheel rims; when the auctioneer said "Sold to Mr. Brickner for a nickel," the man on the block laughed and said, "Brickner, I've been waiting to stick you for a long time and I guess I've done it." "Maybe," answered the supplyman. Brickner took the rims to the store and put them in stock; eventually he sold them all, and the lowest-priced one that went out of his store was \$1.25. If the investment of five cents brought in, say, \$8, what is the per cent. of profit?

He has gauges that would cost 72½ cents wholesale; Brickner sells them for 65 cents and makes a big profit, Knitted scarfs that sell for 25 and 50 cents cost 8 cents apiece, and they are good goods. Radiator and jacket repair compound that retails regularly for \$1 cost him 5 cents and he sells for 55 cents; what is that profit? And so it is all the way through his stock. He has been four years getting it together, but now he has nearly everything a motorist can ask for.

Brickner stated that he makes his profit on his buying, and so he does; but his selling is a well developed feature.

"Do you know how Woolworth, who built the Woolworth building, made his success?" asked Brickner. "He made it by having everything in his stores out in sight and tagged with a price mark. You can walk through a Woolworth store, see everything in the store and know what its price is."

This point is religiously followed out; not having seen his store, one might expect it to be a veritable junk shop, but it isn't. It is a neat little up-to-date establishment. Shelves are enclosed by glass fronts and everything is neatly ar-

ranged and kept clean. Showcases have glass shelves and are brightly polished, and beside every article is a neat little price tag with the figures large and plain. The show windows are kell kept up and neatly trimmed. A survey of the shelves and showcases suffices to acquaint a visitor with everything the supplyman has; the displaying of goods is worked for its last penny of value.

#### Makes Sales by Displaying His Goods.

What keeping things out of sight means with a transient trade is illustrated by a few extreme instances. One day a motorist, who saw the sign stating that Brickner carried cigars, cigarettes and tobacco, went in for a box of cigarettes; the cigarette sign brought him in. When paying for them he noticed a fur coat. He asked Brickner about the coat and was surprised to find that the wayside supplyman had a nice little stock. When he left he took one with him and left \$33.50 with the supplyman. The cigarette sign and coat price tag did it.

A motorcycle rider dropped in at dusk one day to get a Prest-O-Lite key. When he left he carried a coat at \$4.75, a cap at \$1.25 and a pair of gloves at \$1.75. Men who drop in merely to use the telephone often buy something because they saw it displayed with its attractive price mark. "I do not believe in cutting prices," said Brickner, "but when I can dig up bargains and sell them reasonably at a good profit I think that is legitimate."

As to the proprietor himself, he was in the fruit business years ago, but before starting in his present business was a mechanic in the Lozier service station in New York City; he worked there two years and gained a general knowledge of the mechanical end of automobiles and at the same time had his eye on the stretch of Broadway between West 146th street and Yonkers, where there was not a garage for seven or eight miles and where on fine Sundays as many as 400 cars an hour have been counted.

#### Spent All His Money in Starting.

In September, 1911, he gave up his job in the Lozier shop, borrowed \$500 with which to buy a used Lozier car, spent about \$100 more—which was all he had—in fixing up a little two-story wooden shack, 13 x 27 feet, near his present location, and opened a tiny garage and gasolene station.

At first things went slowly, but there was, however, a continuous growth, yet dark days interjected themselves into the situation and there were times when getting the rent money looked as impos-

sible as tearing down the elevated railroad with one hand.

One of these times was Brickner's first New Year's eve in the new venture. The day's business had been slow, there was little money in the till and the rent was due. Almost discouraged, but not pessimistic, Brickner waited for one of those bright rays of sunshine which, he says, have always appeared when things looked most forlorn; as night was falling the telephone rang; it was an allinight job with a party of New Year's celebrators in the old Lozier car. That brought him in \$30. On another occasion a \$150 touring job fell into his lap when he again was "up against it."

When he opened up in the little wooden shack as a "gasolene peddler" he remodeled the interior of the building with his own hands and, ever realizing the value of a neat and clean establishment, gave the front a fresh coat of paint and erected a sign. As the business in the shack kept growing, the landlord seemed to think the shack was worth more and he kept thinking so until the tenant moved.

#### Low Rent Makes Low Storage Rates.

He went to a one-story brick building, shown at the left of the accompanying illustration, and enlarged his business; the building stores about a dozen cars and generally is full, the cars coming from a wide territory. The rates are one inducement. Summer rates are \$10 a month and winter rates \$12 and \$15. The rates are possible because the garage rent is not high and the storage is paid in advance; also, bills for supplies are rendered weekly—and paid.

Gasolene—the foundation of the business—now sells for 19 cents; it costs the proprietor 16 cents. In winter the sales are about 250 gallons a day, but in summer this runs up to 600 gallons a day. In summer this alone is a profit of \$18 a day. Stopping leaks has resulted in a charge of 10 cents for pumping up a tire, 10 cents for filling a radiator and 10 cents for filling and cleaning a lamp.

As the business grew in the new building Brickner began to accumulate his stock of supplies and accessories, which were kept and displayed in the small space at the right of the left hand building. The family lived in the top of the arched structure at the rear, which is the entrance to an abandoned estate. Recently, however, the two-story structure at the right of the picture was erected and is used solely as the supply store, with living quarters upstairs. The new building makes it possible to store 35 cars when necessary.

## CARS FOR CHICAGO'S TWIN "CONSERVATORIES"

## Most of Those Displayed in New York Will Be There Together With 14 That Will "Bloom" Only in the West—Accessory List is Shorter Than Usual Though Not Lacking in Newness

Perhaps the New York show sort of takes the edge off the show feeling—dampens the ardor of show exhibitors, so to speak; and then again perhaps it doesn't do anything of the sort, at least not from the Western viewpoint. But be that as it may, the Chicago show list always has been shorter than that of the New York function, and the forthcoming exhibition, which will be housed in the Coliseum and the First Regiment Armory in the Windy City during the week January 24-31, is no exception to the general rule.

It is to be largely a doing over of what already has been done in New York, of course. Every one knows that. And equally a matter of course, everyone knows that regardless of the necessary duplication of the New York displays, the Chicago exhibition has a reputation for uncovering more than an eyeful of newness that has been especially saved up, so to speak, for Western exploitation; some of it will be contributed by makers who never invade the Eastern show, and some of it will be unveiled by those who let drop discreet hints at the New York show that "something might break" in Chicago.

#### Chicago Show One Week, Too.

And all this newness and not-so-newness will hold the gaze of those who care to look for just one week; as was the case in New York, the Chicago show is to be a one-week affair, for which, be it whispered aside, more than one person is truly thankful. The heavy trucks and the skuttling delivery wagons that last year pushed the pleasure cars out of the Coliseum and the Armory have pushed their last, at least insofar as the Chicago show is concerned. But they hardly will be missed, for there will be quite enough without them to keep busy the eyes and hands and feet of those who pass the ticket takers.

All told—cars and accessories—there will be just 243 exhibitors at the Chicago show, though this does not count, of course, the "post entries" that are sure to be made at the last minute. In the New York show there were 349 exhibitors, including an even dozen motorcycle

displays, and as there are to be no motorcycle displays in the Chicago show, this figure for New York really ought

#### Pleasure Cars to be Exhibited in Chicago, January 24-31.

#### Not Exhibited in New York.

Argo Elec.
Borland-Grannis
Elec.
Broc Elec.
Chicago Elec.
Crow
Lambert

Lexington

Marathon
Pilot
Standard
Westcott
Woods Elec.

Lomax

McFarlan

#### Exhibited in New York.

Abbott-Detroit Marion Allen Maxwell Apperson Mercer Auburn Metz Baker Elec. Mitchell **Buick** Moline-Knight Cadillac Moon Cartercar Oakland Case Ohio Chalmers Ohio Elec. Chandler Oldsmobile Cole Overland Davis Packard Detroit Elec. Paige-Detroit Fiat Partin-Palmer Franklin Pathfinder Great Western Peerless Haynes Pierce-Arrow Henderson Pope-Hartford Herreshoff Premier Hudson Rauch & Lang Hupmobile Elec. Imperial Regal Tackson Rea Jeffery Speedwell Stearns-Knight Keeton Stevens-Duryea King Studebaker Kissel Stutz Krit Velie Locomobile Vulcan Lozier Waverley Elec. Lyons-Atlas White

to be 337, to make the comparison fairer. Even so, it leaves a balance of 94 in favor of New York. Last year's Chicago

Willys-Knight

Winton

McIntyre

Marmon

show held 322 exhibits, which is 79 more than this year's show will hold.

Dissection of all these various figures reveals that of the 243 Chicago exhibits, some 68 will consist of cars, both gasolene and electric, and that no fewer than 14 of them bear brands that did not appear in New York. And as might have been expected-Chicago.always having been a great city for electrics—six of the still uncovered makes carry neither gasolene tanks nor gasolene motors. In the New York show, by way of comparison, there were 78 exhibitors of cars, including half a dozen electrics. The Chicago show, therefore, will hold a total of just 175 accessory exhibitors as against 259 for New York-a difference of 84.

#### How Show Building is Decorated.

Judging by the inadequacy of mere words to paint a picture of the decorations of previous Chicago shows, even after those same decorations had been viewed from every conceivable angle, it will be no simple task to describe the disguise that will cloud the barrenness of the Coliseum and the Armory when the doors are thrown open. One thing is sure: There won't be any mirrors and there won't be quite as much plaster-ofparis wrought into fantastic shapes. It still will be a spectacle, but far less spectacular than shows which have gone before.

For the time being, the two buildings will be converted into what are quite likely to be very excellent imitations of conservatories. The side walls are to be covered with painted panels representing the glass windows in a sure-enough hot house, and trailing vines "planted" near the floor will sprout upward to the roof, the same design being carried out in both buildings. Doubtless the great domed roof of the Coliseum will lend a startling effect to the arrangement.

The aisles, by the way, will be marked by another of Manager Miles's innovations. There are to be rows of slender, tapering poplar trees—really and truly imported from Austria—set of by great vases (or vawses) overflowing with flowers; the dividing line between each separate exhibit is to be marked by

gold pillars topped by statues of the kneeling automobile girl that figures in the posters. Another change that is likely to make more than one person blink an eye is that the gallery surrounding the Coliseum is to be greatly extended to bring the aisle outside the exhibits and thus save the derby hats and plumes of visitors from collision with the roof trusses.

But to get back to what will be displayed under all this wealth of color: The accessory list, as already has been made plain, is quite a little bit shorter than the list that helped make up the New York show. Actually, nearly a third of the names on the New York list have been dropped off. Nevertheless, what with the addition of about two score new names of accessory and parts makers, it is not likely that the loss will cause much weeping.

Among the 11 makes of electric cars that will be exhibited six are the first time out this year, so to speak, though none is entirely new to showgoers; all

of them appeared at the last Chicago show and most of them have been appearing for years However, none of the list of these six makers has been content to rest on his oars, metaphorically speaking, during the past year and all of them will have slight improvementsgentle little touches of finesse-to reveal. The list of electrics includes the Argo, the Borland-Grannis, the Broc, the Chicago, the Standard and the Woods, not counting the ones that were exhibited in New York and which appear a second time.

Naturally, no new mechanical features not covered in Motor World's Before Shows Issue can be expected to reveal themselves, even among the eight brands of gasolene cars that make their first formal bow of the new year. For all of them were gone over very carefully in that issue. Nevertheless, an automobile of any make always looks better in the flesh-the metal, that is-than it does on paper, for there is a better chance for the effect of perspective. The things that

look well in type and that sound better when spoken always are more impressive when there is a chance to see just how they work, how smoothly they perform the functions allotted to them.

Among the cars that have been held back for the first glance of Western showgoers, there is the Lambert, which as nearly everyone knows, has neither clutch nor gears; it is friction driven in the same manner it always has been driven, and there will be the McFarlan, which is the only car at the Chicago show, or at any other show, to be equipped with the Gray pneumatic system of engine starting and gear-shifting. The Lomax, which was scheduled to appear at the New York show but which did not do so, is the only one of the lot that is new throughout and is exhibited for the first time at any show. The rest of the list is made up of Westcott, which already is fairly well known to Western motorists; the Lexington, for which the same can be said: the Pilot, the Marathon, and the Crow.

### Summary of Cars to be Exhibited in Chicago, January 24-31

(Col. denotes Coliseum; Col. An., Coliseum Annex; Ar., Armory; Base., Basement. \* Denotes did not exhibit in New York.)

Abbott Motor Car Co., Detroit, Mich.-Abbott-Detroit four- and six-cylinder cars (Col. B-5). Allen Motor Co., Fostoria, O .- Allen four- and six-cylinder cars (Arm. D-5).

American Cyclecar Co., Bridgeport, Conn.-Trumbull cyclecars (Base. 14).

Anderson Electric Car Co., Detroit, Mich. Detroit electric cars (Arm. A-8).

Apperson Bros. Auto Co., Kokomo,

person four and six-cylinder cars (Col. A-4) Argo Electric Vehicle Co., Saginaw, Mich.—Argo electrics (Ar. A-3).\*

Auburn Automobile Co., Auburn, Ind .-- Auburn four- and six-cylinder cars (Col. An. O-1).

Baker Motor Vehicle Co., Cleveland, O.—Baker

electric cars (Arm. A-2).

electric cars (Arm. A-2).

Borland-Grannis Co., Chicago, Ill.—Borland-Grannis electrics (Ar. A-5).\*

Broc Electric Vehicle Co., Cleveland, O.—Broc electrics (Ar. A-1).\*

Buckeye Mfg. Co., Anderson, Ind.—Lambert four-

cylinder cars (Ar. E-2).

Buick Motor Co., Flint, Mich. -Buick four- and six cylinder cars (Col. B.2).

Cadillac Motor Car Co., Detroit, Mich.-Cadillac four cylinder cars (Col. C-5).

Cartercar Co., Pontiac, Mich.—Cartercar four-cylinder cars (Col. E-1).

Case, J. I., T. M. Co., Racine, Wis.—Case four-

cylinder cars (Col. An. M-1).

Chalmers Motor Co., Detroit, Mich .- Chalmers four and six cylinder cars (Col. B-6). Chandler Motor Car Co., Cleveland, O .- Chand-

ler six-cylinder cars (Arm. C-1).

Chicago Electric Motor Car Co., Chicago, Ill.—
Chicago electrics (Ar. B-6).

Cole Motor Car Co., Indianapolis, Ind.—Cole four and six-cylinder cars (Col. D-2). Crescent Motor Co., Cincinnati O .- Ohio four-

and six-cylinder cars (Base. 16). Crow Motor Car Co., Elkhart, Ind .- Crow four-

and six-cylinder cars (Ar. E.4).\*

Davis, Geo. W., Motor Car Co., Richmond, Ind. Davis four- and six-cylinder cars (Arm. E-1).

F. I. A. T., Poughkeepsie, N. Y.-Fiat four- and six-cylinder cars (Col. An. Q-3).

Franklin, H. H., Mfg. Co., Syracuse, N. Y .-Franklin six-cylinder cars (Col. A-5).

Garford Co., Elyria, O.-Willys-Knight four-cylinder cars (Col. H-1).

Great Western Automobile Co., Peru, Ind.-Great Western four-cylinder cars (Arm. C-2). Haynes Automobile Co., Kokomo, Ind.—Haynes

four- and six-cylinder cars (Col. G-1).

Henderson Motor Car Co., Indianapolis, Ind.—

Henderson four and six-cylinder cars (Arm.

Herff-Brooks Corp., Indianapolis, Ind.-Marathon four- and six-cylinder cars (Base. 3).

Herreshoff Motor Co., Detroit, Mich .shoff four- and six-cylinder cars (Arm. C-3). Hudson Motor Car Co., Detroit, Mich.-Hudson

four- and six-cylinder cars (Col. D-3). Hupp Motor Car Co., Detroit, Mich.-Hupmobile four-cylinder cars (Col. C-3).

Imperial Automobile Co., Jackson, Mich.perial four- and six-cylinder cars (An. N-1).

Jackson Automobile Co., Jackson, Mich.—Jackson four and six-cylinder cars (Col. E-3).

Jeffery, Thos. B., Co., Kenosha, Wis.—Jeffery four and six-cylinder cars (Col. A-4). Keeton Motor Co., Detroit, Mich.-Keeton six-

cylinder cars (Arm. D.2). King Motor Car Co., Detroit, Mich.-King fourcylinder cars (Col. An. Q-2).

Kissel Motor Car Co., Hartford, Wis.-Kissel four- and six-cylinder cars (Col. F-4).

Krit Motor Car Co., Detroit, Mich.-Krit fourcylinder cars (Col. B-1).

Lexington Motor Car Co., Connersville, Ind.-Lexington four- and six-cylinder cars (Base.

Locomobile Co. of America, Bridgeport, Conn.-Locomobile six-cylinder cars (Col. A-2).

Lomax Motor Car Co, Lomax, Ill.—Lomax four-cylinder cars (Base, 13).\* Lozier Motor Co., Detroit, Mich.-Lozier four-

and six-cylinder cars (Col. F-3).

Marion four- and six-cylinder cars (An. O-2).

Lyons Atlas Co., Indianapolis, Ind.-Lyons-Knight four-cylinder cars (Arm. C-6). Marion Motor Car Co., Indianapolis, Ind.-Maxwell Motor Co., Inc., Detroit, Mich.-Maxwell four- and six-cylinder cars (Col. C-2).

McFarlan Motor Co., Connersville, Ind .- McFarlan six-cylinder cars (Ar. E-3).

McIntyre Co., W. H., Auburn, Ind.—McIntyre four-cylinder cars (Col. An. Q-1). Mercer Automobile Co., Trenton, N. J .- Mercer

four-cylinder cars (Arm. B-2). Metz Co., Waltham, Mass.—Metz four-cylinder cars (Col. L-1).

Mitchell-Lewis Motor Co., Racine, Wis.-Mitchell four- and six-cylinder cars (Col. K-1). Moline Automobile Co., East Moline, Ill.—Mo-

line-Knight four-cylinder cars (Arm. B-5). Moon Motor Car Co., St. Louis, Mo.-Moon four- and six-cylinder cars (Col. J-1). Motor Car Mig. Co., Indianapolis, Ind.-Path-

finder four- and six-cylinder cars (Arm. B-4). National Motor Vehicle Co., Indianapolis, Ind-National four- and six-cylinder cars (Col. H-2). Nordyke & Marmon Co., Indianapolis, Ind.-Marmon four- and six-cylinder cars (Col. G-2).

Oakland Motor Car Co., Pontiac, Mich.-Oakland four- and six-cylinder cars (Col. D-5). Ohio Electric Car Co., Toledo, O.-Ohio electric cars (Arm. A-6).

Olds Motor Works, Lansing, Mich.-Oldsmobile six-cylinder cars (Col. An. P-1).

Packard Motor Car Co., Detroit, Mich .- Packard six-cylinder cars (Col. A-6). Paige-Detroit Motor Car Co., Detroit, Mich .-

Paige-Detroit four-cylinder cars (Col. A-3). Partin-Mfg. Co., Chicago, Ill .- Partin-Palmer

four-cylinder cars (Arm. E-5). Peerless Motor Car Co., Cleveland, O.-Peerless six-cylinder cars (Col. C-2).

Pierce-Arrow Motor Car Co., Buffalo, N. Y .-Pierce-Arrow six-cylinder cars (Col. C-6).

Pilot Car Sales Co., Richmond, Ind .- Pilot fourand six-cylinder cars (Base. 18).

Pope Mfg. Co., Hartford, Conn.—Pope-Hartford four and six-cylinder cars (Arm. C-4). Premier Motor Mfg. Co., Indianapolis, Ind.— Premier six-cylinder cars (Col. E-2).

Rauch & Lang Carriage Co., Cleveland, O .-Rauch & Lang electric cars (Arm. A-4). Regal Motor Car Co., Detroit, Mich.—Regal fourcylinder cars (Col. B-4).

#### MOTOR WORLD

- Reo Motor Car Co., Lansing, Mich.—Reo four-cylinder cars (Col. B-3).
- Speedwell Motor Car Co., Dayton, O.—Speedwell six-cylinder cars (Arm. B-8).
- Standard Electric Car Co., Jackson, Mich.—Standard electrics (Ar. C-5).\*
- Stearns Co., F. B., Cleveland, O.—Stearns-Knight four- and six-cylinder cars (Col. F-1).
- Stevens-Duryea Co., Chicopee Falls, Mass.— Stevens-Duryea six-cylinder cars (Col. C-4).
- Studebaker Corp., Detroit, Mich.—Studebaker four- and six-cylinder cars (Col. D-4).
- Stutz Motor Car Co., Indianapolis, Ind.—Stutz four- and six-cylinder cars (Arm. D-7).
- Velie Motor Vehicle Co., Moline, Ill.—Velie fourand six-cylinder cars (Col. D-6).
- Vulcan Mfg. Co., Pinesville, O.—Vulcan fourcylinder cars (Base. 2).
- Waverley Co., Indianapolis, Ind.—Waverley electric cars (Arm. B-1).
- Westcott Motor Car Co., Richmond, Ind.—West-cott four- and six-cylinder cars (Base. 5a).\*
- White Co., Cleveland, O.—White four- and sixcylinder cars (Col. F-2).
- Willys-Overland Co., Toledo, O.—Overland fourcylinder cars (Col. D-1).
- Winton Motor Carriage Co., Cleveland, O.— Winton six-cylinder cars (A-1).
- Woods Motor Vehicle Co., Chicago, Ill.—Woods electrics (Ar. A-7).\*

## The 175 Accessory Exhibitors and What They Will Display

(Col. An. denotes Coliseum Annex; Col. Gal., Coliseum Gallery; Arm. Bal., Armory Balcony; An. Bal., Annex Balcony; Base., Basement. \* Denotes did not exhibit in New York.

- Ajax Trunk & Sample Case Co., New York—Ajax trunk and tire cases (Col. An. 150-151).
- American Bronze Co., Berwyn, Pa.—Non-Gran bearing metals (Col. Gal. 90).
- American Hardware Corp., New Britain, Conn.— Corbin-Brown speedometers and Chelsea clocks (Col. Cal. 7).
- American Taximeter Co., New York City, N. Y.

  —Taximeters, Recordographs, and tail and license lamp (Base. 12a).
- Apple Electric Co., Dayton, O.—Aplco lighting and ignition systems (Col. Gal. 37).
- Arnold, N. B., Brooklyn, N. Y.—Slikup specialties (Col. An. 222-224).
- Auto Parts Co., Chicago, Ill.—Parts (Ar. Bal. 13-15).
- Automobile Supply Mfg. Co., Brooklyn, N. Y.— Newtone and Motophone horns (Col. An. 101-102).
- Automatic Tire Rest Co., Kansas City, Mo.—
  (Base. 1).\*
- B. & L. Auto Lamp Co., New York—B. & L. lamps (Arm. Bal. 23).
- Badger Brass Mfg. Co., Kenosha, Wis.—Solar lamps (Col. Gal. 69-70).
- Baldwin Chain & Mfg. Co., Worcester, Mass.—Baldwin chains (Col. Gal. 27).\*
- Bausch Machine Tool Co., Springfield, Mass.— Bausch drilling machines (Arm. Bal. 20).
- Benford Mfg. Co., Mt. Vernon, N. Y.—Monarch spark plugs, lamp lighters and wheel pullers (Col. An. 191-194).
- Blackledge, John W., Mfg. Co., Chicago-Velvet shock absorbers (Col. An. 103).
- Bowser, S. F., & Co., Inc., Ft. Wayne, Ind.—Gasolene storage systems (Col. Gal. 75).
- Braender Rubber & Tire Co., Rutherford, N. J.

  -Braender tires (Base. 10-A).
- Breakstone, S., Chicago, Ill.—Watch Dog lever locks and Hopewell tire cases (Col. An. 218-219).\*
- Brown Co., Syracuse, N. Y.—Brown impulse tire pumps (Col. An. 207-209).
- Brown, Wm. H., Cleveland, O.—Brown Trafilog and Brown top lifter (Col. An. 200-202).
- Brown-Lipe-Chapin Co., Syracuse, N. Y.—Gearsets and bevel gears (Col. Gal. 38).
- Buchanan Electric Steel Co., Buchanan, Mich.— Steels (Base, 12c).
- B.T.K Gear & Engine Co., Muncie, Ind.—Gearsets, clutches, control levers and steering gears (Col. Gal. 58).\*
- Buda Co., Harvey, Ill.—Buda motors (Col. Gal.
- Byrne, Kingston & Co., Kokomo, Ind.—Kingston carburetters and ignition specialties (Col. Gal. 64).
- Carr, F. S., & Co., Boston, Mass.—Neverleek top materials (Col. Gal. 17-18).
- Champion Ignition Co., Flint, Mich.—A C spark plugs (Col. An. 239).
- Champion Spark Plug Co., Toledo, O.—Champion spark plugs (Base. 10-B). Chilton Co., Philadelphia, Pa.—Publications (Ar. Bal. 34).\*

- Class Journal Co., New York, N. Y.—Publications (Ar. Bal. 35-40).
- Cotta Gear Co., Rockford, Ill.—Cotta transmissions (An. Bal. 17).\*
- Cotta Transmission Co., Rockford, Ill.—Transmissions (Col. An. 107).\*
- Cowles, C., & Co., New Haven, Conn.—Fisher mechanical window lift and other automobile specialties (Col. Gal. 31).
- Cramp & Sons Ship & Engine Building Co., Philadelphia, Pa.—Cramp's bearing and other metal products (Col. Gal. 79).
- Cyclecar Age, New York (Arm. Bal. 27).
- Dann Oil Cushion Spring Insert Co., Chicago, Ill.—Lubricating devices for leaf springs (Arm. Bal. 16).
- Dean Electric Co., Elyria, O.—Elyria-Dean warning signals, speedometers, ignition and other specialties (Arm. Gal. 92).
- Dean Auto Device Co., Chicago, Ill.—(Col. An. 240).\*
- Detroit Electric Appliance Co., Detroit, Mich.—
  Deaco starting-lighting-ignition systems (Arm. Gal. 16).
- Detroit Lubricator Co., Detroit, Mich.—Stewart carburetters and Detroit mechanical force feed oilers (Arm. Gal. 19).
- Detroit Steel Products Co., Detroit, Mich.—Detroit springs (Arm. An. 228-230).
- Diamond Chain & Mfg. Co., Indianapolis, Ind.—Diamond chains (Col. Gal. 44).\*
- Dixon Crucible Co., Jos., Jersey City, N. J.—Graphite lubricants (Arm. Gal. 22).
- Doehler Die-Casting Co., Brooklyn, N. Y.— Rabbitt-lined bearings, die-cast pumps and other parts of white metal and aluminum (Arm. Gal. 11).
- Double Fabric Tire Co., Auburn, Ind.—Interlock inner tires, Vulco and Junior patches, Jumbo boots and other tire specialties (Arm. An. 133-138).
- Dunlop Wire Wheel Corp., New York—Dunlop wire wheels (Arm. An. 145-149).
- Dykes Co., J. L. G., Chicago, Ill.—Dykes tire reliners (Arm. Gal. 20).
- Dyneto Electric Co., Syracuse, N. Y.—Dyneto and Entz starters (Arm. An. 172).

  Eavenson & Sons, J., Camden, N. J.—Soaps and
- polishes (Arm. An. 220-221). Edelman, E., & Co., Chicago, Ill.—Tire gauges.
- valves, etc. (Col. An. 166-168).\*
- Edison Storage Battery Co., West Orange, N. J.

  —Edison storage batteries (Col. Gal. 85).
- Edmunds & Jones Mfg. Co., Detroit, Mich.—Gas, oil and electric lamps (Col. Gal. 76).
- Electric Products Co., Cleveland, O.—Wotton automatic rectifiers (Base. 11b).\*
- Electric Auto-Lite Co., Toledo, O.—Auto-Lite electric lighting, starting and ignition systems (Col. An. 170).
- Electric Storage Battery Co., Philadelphia, Pa.— Exide storage batteries (Col. Gal. 41).
- Eveland Engineering & Mig. Co., Philadelphia, Pa.—Electric riveting machines (Base. 11-C).
- Findeisen & Kropf Mfg. Co., Chicago, Ill.—Rayfield carburetters (Col. Gal. 98).

- Fort Dearborn Mfg. Co., Chicago, Ill.—Machine work (Base. 8c).\*
- Franklin Mfg. Co., H. H., Syracuse, N. Y.— Die castings. (Col. An. 159-162).
- Frasse. Peter A., & Co., Inc., New York— Shelby tubing, Poldi tool steel, machinery and supplies, Renold chains (Arm. Bal. 18).
- Frazer Lubricator Co., Chicago, Ill.—Lubricants, soaps and polishes (Arm. Bal. 19).
- Funke Co., Herbert F. L., Inc., New York—Coventry chains, White & Poppe carburetters (Arm. Bal. 26).
- G. B. Garage & Míg. Co., Hempstead, L. I.—Portable garages (Ar. Bal. 11).\*
- Gabriel Horn Mfg. Co., Gabriel and Jubilee horns and Gabriel rebound snubbers (Col. Gal. 50).
- Garage Equipment Míg. Co., Milwaukee, Wis.— Gemco automobile parts and accessories (Col. Gal. 21).
- Gemmer-Detroit Starter Co., Detroit, Mich.—Air starters (Col. An. 182-185).
- Globe Machine & Stamping Co., Cleveland, O.—Globe metal tool and battery boxes (Col. Gal. 2).
- Golde Patent Mfg. Co., New York-Golde oneman tops (Col. An. 129-132).
- Gould Storage Battery Co., New York, N. Y.—Gould storage batteries (Col. Gal. 15).\*
- Gray & Davis, Inc., Boston, Mass.—Gray & Davis lighting and starting systems and lamps (Col. Gal. 57-72).
- Gray Pneumatic Gear Shift Co., New York—Gray pneumatic gearshifting system (Base. 9-C—9-D).
- Halladay Co., L. P., Streator, Ill.—Bumpers, levers, pedals, tire carriers, license brackets, etc. (Base. 12b).\*
- Hans Motor Equipment \*Co., La Crosse, Wis.— Tank and pressure gauges and other specialties (Base. 12-D).
- Harris Oil Co., A. W., Providence, R. I.—Harris lubricants and soaps (Col. Gal. 63).
- Hartford Suspension Co., Jersey City, N. J.— Truffault-Hartford shock absorbers, Hartford electric brake and starting and lighting systems (Col. Gal. 59-60).
- Havoline Oil Co., New York—Havoline oils (Col. An. 174).
- Hayes Míg. Co., Detroit, Mich.—Pressed steel specialties (Col. Gal. 52).
- Heinze Electric Co., Lowell, Mass.—Heinze magnetos and ignition specialties (Col. Gal. 51). Hess Spring & Axle Co., Carthage O.—Springs
- and axles (Col. Gal. 9-10).\*
- Hill Pump Valve Co., Chicago, Ill.—Spark plug pumps (Col. An. 171).\*
- Hoffecker Co., Boston, Mass.—Hoffecker speedometers (Col. Gal. 17).
- Housel Mfg. Co., Rochester, N. Y.—(Base. 4).\*
- Horseless Age Co., New York (Arm. Bal. 1).
  Ideal Steel Wheel Co., Cincinnati, O.—Steel wheels (Base. 8d).\*
- Imperial Brass Mfg. Co., Chicago, Ill.—Carburetters and brass parts (Col. Gal. 91).\*

- International Acheson Graphite Co., Niagara Falls, N. Y.—Graphite lubricants (Col. Gal. 93).
- J-M Shock Absorber Co., Inc., Philadelphia, Pa.
   J. M. shock absorbers (Col. An. 139-144).
- Johns-Manville Co., H. W., New York—J-M Asbestos and other products, Jones speedometers, Mezger spark plugs, Carter carburetters, Long horns, and other specialties (Col. Gal. 1).

Jones Electric Starter Co., Chicago, Ill.—Jesco starting and lighting systems (Arm. Bal. 5).

- K-W Ignition Co., Cleveland, O.—K-W low-tension generators and other lighting and ignition specialties (Arm. Bal. 21).
- Kellogg Mfg. Co., Rochester, N. Y.—Air pumps and air starting systems (Col. Gal. 89).
- Kemco Electric Mfg. Co., Cleveland, O.—Fantype electric generators (Col. An. 178-179).
- Kent Mfg. Works, Atwater, Philadelphia, Pa.— Atwater Kent ignition systems and Monoplex horns (Col. Gal. 8).
- Keystone Lubricating Co., Philadelphia, Pa.-Lubricants (Col. An. 195-196).\*
- Leonard, Ward, Electric Co., Bronxville, N. Y.— Ward Leonard electric lighting and starting systems (Col. An. 105-106).
- Leather Tire Goods Co., Niagara Falls, N. Y.— Woodworth treads and other tire specialties (Col. An. 104-105).
- Lovell-McConnell Mfg. Co., Newark, N. J.— Klaxon horns (Col. Gal. 46-47).\*
- M. & A. M.-(Col. Gal. 77).
- McCord Mfg. Co., Detroit, Mich.—Radiators, lubricators, and McKim gaskets (Col. Gal. 84).\*
  McQuay-Norris Mfg. Co., St. Louis, Mo.—Leak-proof piston rings. (Arm. Bal. 8).
- M. & S. Gear Co., Kansas City, Mo.—Muchl spiral differentials (Base. 12-D).
- Marburg Bros., Inc., New York—Mea magnetos and other specialties (Arm. Bal. 37-38).
- Mayo Mfg. Co., Chicago, Ill.—Spark plug pumps and tire gauges (Col. An. 221-233).
- Metal Stamping Co., Long Island City, N. Y.— Hub caps, grease cups, wheel pullers, lighting outfits and other specialties (Col. An. 152-154).
- Miller, Chas. E.—Excel jack, M. M. controller and equalizer, and a complete line of supplies and specialties (Base. 8-A).
- Model Gas Engine Works, Peru, Ind.—Model motors (Col. An. 163-165).
- Morrison-Ricker Mfg. Co., Grinnel, Ia.—Grinnel gloves, etc. (Ar. Bal. 33).\*
- Mosler & Co., A. R., Mt. Vernon, N. Y.—Mosler Spit-Fire spark plugs and other specialties (Col. Gal. 83).
- Motor Vehicle Publishing Co., New York, N. Y.
  —Publications (Ar. Bal. 6).\*
- Motometer Co., Inc., New York—Motometers (Col. Annex 117-119).
- Motor, New York (Arm. Bal. 12).
- Motor World Publishing Co., New York (Arm. Bal. 32).
- Motsinger Device Mfg. Co., Lafayette, Ind.— Motsinger ignition devices and carburetters (Col. Gal. 32.)
- National Coil Co., Lansing, Mich.—National magnetos and other ignition specialties (Col. An. 120-123).
- National Lead Co., New York—Die-castings, paints and electric wire conduits (Col. An. 203-206).
- National Rubber Co., St. Louis, Mo.—Narco tire repair material (Col. An. 225-227).
- National Tube Co., Pittsburgh, Pa.—National steel tubing (Col. Gal. 53).
- Niehoff & Co., Paul G., Chicago, Ill.—Tire repair material (Base. 11-A).
- North East Electric Co., Rochester, N. Y.— North East electric lighting and starting systems (Col. An. 175-177).
- New York Coil Co., New York—Nyco ignition specialties and other ignition supplies (Arm. Bal. 24).

- N. Y. & N. J. Lubricant Co., New York-Non-fluid oils (Col. Gal. 97).
- Overman Tire Co., New York—Overman tires (Col. An. 186-190).
- Pantasote Co., New York—Solitaire tops and pantasote fabrics (Col. Gal. 13-14-23-24).
- Peacock, Clarence N., & Co., New York—Ames shock absorbers (Arm. Bal. 2).
- Philadelphia Storage Battery Co., New York-Philadelphia storage batteries (Base. 9-A).
- Pierce Speed Controller Co., Anderson, Ind.— Pierce motor and car speed controllers (Base. 10d).\*
- Platt & Washburn Oil Co., New York-Lubricants (Base. 5).
- Pratt, W. E., Mig. Co., Chicago, Ill.—Jacks (Ar. Bal. 31).\*
- Randall Faichney Co., Boston, Mass.—B-line grease guns, Copley leather-packed guns, Blitz spark plugs, Jericho gas regulator, Webster gasolene gauge and Ranfac vulcanizer thermometer (Col. An: 173).
- Remy Electric Co., Anderson, Ind.—Remy ignition, lighting and starting systems (Col. Gal. 28-29-30).
- Reynolds-Browne Co., Chicago, Ill.—(Col. An. 197-199).\*
- Rhineland Machine Works Co., New York— Rhineland ball bearings (Arm. Bal. 22).
- Rich Tool Co., Chicago—Tools and valves (Col. An. 210-212).
- Rose Mfg. Co., Philadelphia, Pa.—Neverout lamps and fittings and license brackets (Col. Gal. 65).
- Royal Equipment Co., Bridgeport, Conn.—Brake linings and other automobile accessories and supplies (Col. Gal. 80).
- Rutenber Motor Co., Marion, Ind.—Rutenber power plants (Col. Gal. 26).\*
- Sager, J. H., & Co., Rochester, N. Y.—J. H. shock absorbers and other automobile specialties (Col. Gal. 66-67).
- Schwarz Wheel Co., Philadelphia, Pa.-Wood wheels (Col. Gal. 61-62).
- Schrader's Son, A., Brooklyn, N. Y.—Tire valve gauges (Col. Gal. 34).
- Shaler Co., C. A., Waupun, Wis.—Shaler vulcanizers (Col. Gal. 48-49).
- Sharrer Patent Top Co., Inc., New York—Sharrer tops (Arm. Bal. 39).
- Silvex Co., New York—Bethlehem spark plugs and polishes (Base. 11-D).
- Simms Magneto Co., New York—Simms magnetos (Col. Gal. 78).
- Sireno Co., New York—Sireno horns (Col. An. 108).
- Smith Tire Valve Co., Boston, Mass.—Tire valves
  (Base, 4a).\*
- Sparks-Withington Co., Jackson, Mich.—Sparton horn, fans and other specialties (Col. Gal. 88).
   Spicer Mfg. Co., Plainfield, N. J.—Spicer universal joints (Col. Gal. 36).
- Splitdorf Electrical Co., Newark, N. J.—Splitdorf high- and low-tension magnetos, starting and lighting outfits and other electrical specialties (Col. Gal. 56-73).
- Springfield Meal Body Co., Springfield, Mass.—Convertible metal bodies (Col. Gal. 33).
- Stafford Auto Lamp & Number Co., Chicago, Ill.

  —(Ar. Bal. 28).\*
- Standard Thermometer Co., Boston, Mass.—Standard speedometers, Abell tire pumps, and radiator thermometers (Col. Gal. 3).
- Standard Welding Co., Cleveland, O.—Seamless welded tubing and Stanweld rims (Col. Gal. 86-87).
- Standard Woven Fabric Co., Framingham, Mass.
  —Multibestos brake lining and friction wheel
  material (Arm. Bal. 29).
- Stewart-Warner Speedometer Corp., Chicago, III.

  --Stewart and Warner speedometers, and tire
  pumps (Col. An. 109-116).

- Stickney, Chas. A., St. Paul, Minn.—(Base. 7).

  Stromberg Motor Devices Co., Chicago, Ill.—

  Stromberg carburetters (Col. Gal. 35-36).
- Sulzberger & Sons, Chicago, Ill.—(Ar. Bal. 9-10).\*
- Thermoid Rubber Co., Trenton, N. J.—Thermoid and Nassau tires (Col. An. 155-158).
  Thurber Rotary Starter Co., Detroit, Mich.—
- Thurber air starters (Col. An. 213-217).

  Tingley, Chas. O., & Co., Rahway, N. J.—Vulcanizers and tire repair materials (Arm. Bal. 30).
- Torbensen Gear & Axle Co., Newark, N. J.— Torbensen undergeared rear axle assemblies (Col. Gal. 6).
- Trenton Brass & Machine Co., New York-Flechter carburetters (Col. An. 242).
- Triple Action Spring Co., Chicago, Ill.—Springs (Col. An. 243).\*
- Tuthill Spring Co., Chicago, Ill.—Springs (Ar. Bal. 36).\*
- U. S. Ball Bearing Co., Oak Park, Ill.—Ball
- bearings (Col. An. 234-236).\*
  United & Globe Rubber Mfg. Co., Trenton, N. J.
  —Globe tires (Arm. Bal. 25).
- United States Light & Heating Co., New York City—U. S. L. storage batteries and electric lighting and engine starting systems (Col. Gal. 81-82).
- Universal Lubricating Co., Cleveland, O.—Tulc petroleum lubricant (Arm. Bal. 7).
- Universal Machine Co., Bowling Green, 0.— Ball bearings and three-piece universal joints (Base, 1-A).
- Vacuum Oil Co., New York City-Mobiloils and lubricants (Col. Gal. 54).
- Valentine & Co., New York City-Paints and Valspar varnishes (Col. Gal. 68).
- Veeder Mfg. Co., Hartford, Conn.—Veeder odometers, hub odometers, revolution counters (Col. Gal. 55).
- Vesta Accumulator Co., Chicago, Ill.—Vesta Storage batteries and lighting outfits (Col. Gal. 95).
- Voorhees Rubber Mfg. Co., Jersey City, N. J.— Red inner tubes and mechanical rubber goods (Col. An. 100).
- Vulcan Process Co., Minneapolis, Minn.—(Col. An. 241).\*
- Waltham Watch Co., Waltham, Mass.—Automobile clocks (Col. Gal. 45).
- Warm Hand Steering Wheel Corp., Poughkeepsie, N. Y.—Electrically warmed wheels (Base. 6).
- Warner Gear Co., Muncie, Ind.—Clutches, transmissions, Lanchester-Daimler worm drive assemblies (Col. Gal. 4).
- Warner Mfg. Co., Toledo, O.—Gearsets and engine starters (Col. Gal. 74).\*
- Wayne Oil Tank & Pump Co., New York City
  —Storage systems (Arm. Bal. 3-4).
- Waukesha Motor Co., Waukesha, Wis.-Waukesha motors (Col. An. 124-128).\*
- Weaver Mfg. Co., Springfield, Ill.—Weaver jacks (Base, 10c).\*
- Weed Chain Tire Grip Co., New York City— Weed anti-skid chains, Lyons grips and Dobbins blow-out repairs (Col. Gal. 96).
- Western Electric Co., New York City-Champhone telephone system (Base. 9-D).
- Western Tire & Rubber Co., Kansas City, Mo.— Tires (Base. 8b).\*
- Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.—Ignition, electric lighting and starting devices (Col. Gal. 2 and 99).
- Wheeler & Schebler, Indianapolis, Ind.—Schebler carburetters (Col. Gal. 25).
- Whitney Mfg. Co., Hartford, Conn.—Whitney chains and cotter keys, etc. (Col. Gal. 94).
- Willard Storage Battery Co., Cleveland, O.—Willard storage batteries (Col. Gal. 42).

## ORDERS, NOT CALLS, THE THING THAT COUNTS

## The Salesman Who Was Ideal Except That He Brought in No Orders —Reilly Narrates His Experiences With an Employe of Similar Type—Damage Done by Too Many Calls on Prospects.

Reilly—Tom Meck—the Sales Manager. To one who knew the three it was unnecessary to say more.

Reilly hadn't been to the factory in a month; Meck had been "district managing" for longer than that out in the country where blizzards are born with-

man. "Remember when I wrote about Fresnett, the dealer in Granite Junction, wanting a salesman. He's the man, you know, who never could get a salesman to suit."

"Yes, what now?" replied the Sales Manager.

The second Limit and Second Se

"HE WANTS ANOTHER SALESMAN, THAT'S ALL," LAUGHED MECK

out effort, and the Sales Manager had been laying pipes for spring business with an industriousness which was almost a grind.

But now Meck had found a legitimate excuse to come back to the factory and Reilly had "happened in" also, and from the minute the three came together like three suds bubbles in the middle of a tub of wash water, the garrulous reunion had been an unbroken session. It began in the afternoon and wasn't interrupted even by dinner, for the Matheroft cuisine still held its reputation.

#### Regular Beds Attractive to Meck.

The trio had, however, been somewhat quiet while the individual members of the party made backhanded dives at the soup and tried their best to coax it over the edges of alleged soup spoons without slerrupping.

"Seems good to get back to a regular hotel with man's sized sheets and see old faces, believe me!" remarked Meck as he lighted a cigarette in deep contentment.

"We've missed you—honest," said Reilly. "Things were beginning to lose all their breeziness."

"Oh, say!" interrupted the Western

"Nothing unusual," laughed Meck; "he wants another salesman, that's all."

"Is that all? He ought not to worry about that; he ought to be used to want-

"This"—and Meck hitched up in his chair for the important announcement—"is an entirely original complaint with Fresnett. It's something he never sprung before. He says the salesman was a fine caller but a poor order getter."

"What's that?" both the others exclaimed simultaneously.

"That's what he said," declared Meck.
"Fresnett said the salesman could see
more prospects and get fewer orders
than any other man he ever saw. He was
an ideal salesman with that one exception—he didn't get orders."

#### Mistakes Call Reports for Results.

"Wasn't he all right outside of that?" asked the Sales Manager.

"That's just what I asked Fresnett, and he got sore," laughed Meck.

"He's a report sheet filler," was Reilly's definition.

"A what?" from both the others.

"You know," explained Reilly; "one of these fellows who gauges his work by the kind of report sheet he can fill out. If he can put down a long string of calls he considers he has earned his money.



"I ASKED HIM FOR A LITTLE LESS REPORT AND A LITTLE MORE ORDER"

ing a salesman. How many has he had?"

"The Lord knows!" Meck upheld his extended palms. "I got him one the last time——"

"But he didn't suit," supplied Reilly.

"What ailed this last one?" inquired the Sales Manager as he ducked sidewise to give the waiter room according to his importance. If he hasn't made as many calls as he thinks he might have made he imagines he hasn't done anything."

"His main idea is to avoid losing his job; is that it?" asked the Sales Manager.

"His idea missed out badly then," commented Meck. "He didn't last a month."

"One of that kind worked for me once



—for a while," replied Reilly, who discovered he had dissected his fish the wrong way and had let loose a flock of young bones and therefore had to pick skilfully. "I couldn't keep him, either, he was that useless," he added.

"No orders?" asked Meck.

"I think he did get one by accident, but it wasn't due to any good work on his part," replied the dealer. "He came along one day and wanted a job; he had get it for about six dollars a week."
"What did you do?" inquired Meck.

"Well, after this gentleman had been sashaying about town in that style for a couple of weeks I asked him if he didn't think he could turn in a little less report and a little more order. 'What do you mean?' he demanded. 'Just this,' I said; 'you've been gunning around among those prospects for two weeks now and you certainly have made a lot

"You must give him credit for one thing," asserted Meck. "He certainly made the prospects realize there was such a dealer as Reilly in town."

"Realize it! I should say yes!" exclaimed Reilly. "He overdid it!"

"Overdid it?" questioned the Sales Manager.

"If you don't think he did my fine list some damage you should have gone through what I did trying to put things right again! After he took his departure I got some warm receptions! The prospot some warm receptions! The prospects wanted to know why in — I didn't give them a chance to catch a breath and a little time to attend to their regular business. They said my salesman had been chasing the lives out of them! They—"



"THE PROSPECTS GOT SO THEY WOULDN'T NOTICE HIM AT ALL"

been sent by a man I know, so I thought I'd take him on.

"He came fairly well recommended—by himself especially—and I supposed he would go right out, dig up some prospects and proceed to bring in some orders—but he didn't. He maneuvered around and finally, before I realized what I was doing, I had handed him a fine big list of prospects and the way he went at the list I gave him made me think he might be a hummer, after all."

"But, comma," interrupted Meck.

#### "Progress" A-plenty but No Sales.

"But, comma," repeated Reilly, "his humming didn't produce anything worth while. I grew quite enthusiastic over him the first few days he worked on the prospect list; he would come in at night and make out a very beautiful report. He had called on Bill Smith and found that Bill likely would buy in about two months. Jimmy Jones looked promising, but was removed by about three months. He would see the sonofagundest bunch of people in one day that you ever heard of—and with nearly every one he would report progress."

"Sounds like the report of the Agitation Committee at a meeting of a Hod Carriers' Union," smiled Meck.

"Didn't you want progress?" asked the Sales Manager, who smiled, too.

"Want it!" exclaimed Reilly. "Just crazy for it! But if progress consists of going around and saying 'How do you do?' to the prospect list every day I can of calls. I must commend you for your industry in being a world's champion in the visiting line, but calls without an order here and there are like bean soup with no beans. Can't you dig up a bean or two?"

"'Don't you like my work?' he asked. 'With that one exception, yes,' I told

#### Salesman Did More Harm Than Good.

"That's one of the kicks Fresnett had!" suddenly exclaimed Meck. "He said the salesman did more harm than good and the prospects got so they wouldn't notice him at all."

"One of your predecessors was more or less of a paper results man," remarked the Sales Manager, turning to Meck

"He was!"

"Very much so. We never could find any fault with the reports he turned in, but he was short on results. He would jump, jump, jump from town to town, hitting them like a rabbit hits the high



"HE WOULD JUMP, JUMP, JUMP FROM TOWN TO TOWN LIKE A RABBIT"

him. 'But you have thus far failed to produce much in the way of results.' 'I know.' he said, 'but I work hard, don't I? Haven't I been on the job every day, been on hand every morning on time and worked hard all day getting around to see these people?' 'No dispute on that point.' I replied; 'you certainly have given enough in the way of time and apparent effort, but the orders you get are what help me run my business and pay your salary. and if you bring in no orders where do I get off?' He had no answer to that."

spots of the landscape, and that got to be one of his main objects. He was neglecting his work anyway and thought this was covering things up."

Conversation ceased while the waiter held lighted matches to three cigars. "What now?" asked the Sales Manager, who indicated that he was the host.

"A little benedic-'teen.' " said Meck

"A little benedic-'tin.'" suggested the Sales Manager.

"Benedic-'tyne,' " said Reilly.

"All from the same bottle, gentlemen?" asked the waiter as he hurried away.

## THREE WHOLE FLOORS FOR DETROIT'S ANNUAL SHOW

Dealers' Display, Made Possible by Ford's Generosity, Holds 73 Separate Exhibits — Cars and Trucks Are Mingled.

Having already clearly silhouetted himself against the sky in another and quite different manner, it can cause no heartburnings to state that Henry Ford walk down, thus ensuring that they will see pretty nearly everything that is seeable, to coin a word, worked so well in New York, in fact, that it was adopted by the Detroit dealers, and it is working just as well in Detroit.

On the whole, the Detroit show is considerably smaller than was the New York function, as might have been expected, nor does it hold as much that is new as was held by its immediate predecessor. All told, there are 73 exhibitors of vehicles and accessories, of whom 37 show some 41 different brands of gasolene

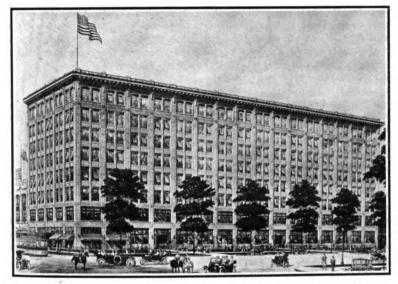
in an appearance is R. C. Hupp's \$1,000 Monarch, which proved an attraction by itself. The Monarch Motor Car Co., applied for and got space at the last moment.

Needless to add, the bareness of the walls of the Ford building is hidden behind the usual variety of diaphanous decorations and draperies, and quite as a matter of course there are strings and strings and bunches of glowing tungstens that almost literally turn night into day.

Incidentally, those responsible for the show are responsible for the adoption of a clever way out of the eternal ticket problem. There are no tickets. Instead, the half dollar that gives admission to the building serves as the ticket, in lieu of which it is dropped into a machine at the door as nickels are dropped in the conductor's box on a "pay-as-you-enter" trolley car. Change is provided for those who need it.

The complete list of exhibitors is as follows:

Pleasure cars: Buick Motor Co., Buick; Cadillac Motor Car Co., Cadillac; Standard Auto Co., Packard; Winton Motor Car Co., Winton; Oakland Motor Car Co., Oakland; Grant Bros. Co., Grant and Chandler; Neumann-Lane Co.. Chalmers and Pierce-Arrow; Overland Detroit Co., Overland: Cunningham Auto Co., Maxwell; M. W. Young, Reo; Ford Motor Co., Ford; Oldsmobile Co., Oldsmobile; Wetmore-Quinn Co., Lozier and Paige-Detroit; Grassner Motor Co., Hupmobile; Siegel-Zeckendorf Co., Cole; Keeton Motor Co., Keeton and Carnation; P. W. Schulte & Son, Patterson: Jackson Automobile Co., Jackson; Cartercar Co., Cartercar.



MAMMOTH FORD BRANCH BUILDING WHICH HOUSES DETROIT SHOW

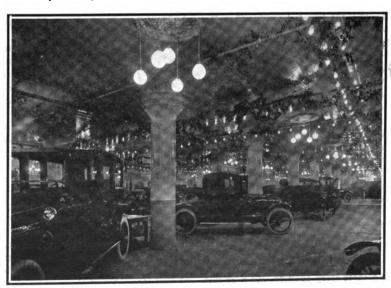
virtually made possible the Detroit automobile show. He contributed the immense Ford branch building at the corner of Woodward avenue and the Grand Boulevard, for the purpose, and if he had not done so the "13th annual" probably would have been skipped, for long since the Detroit show has outgrown every other building in which it could be placed; last year, even with an annex filling the lot back of the Wayne Pavilion and part of the street, there was crowding.

This year it is quite different, for the Ford building provides three whole spacious floors. The show, which is under the auspices of the Detroit Automobile Dealers' Association, was formally opened on Saturday night, 17th inst., and will hold the boards until Saturday, 24th inst.

In more than one respect the Detroit show is not unlike the great New York show which occupied four floors of Grand Central Palace, and where big elevators took the spectators up but would not take them down. The scheme of getting visitors up. and letting them

pleasure cars, not counting the six makes of commercial vehicles, 19 show accessories and there is a single motorcycle exhibit.

Practically the only newcomer that put



SHOWING DECORATIVE TREATMENT OF DETROIT SHOW

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Studebaker Corp., Studebaker; Krit Motor Car Co., Krit; Bemb-Robinson Co., Hudson; Postal Fair Motor Co., Peerless; Regal Motor Sales Co., Regal; Gaston Richardson Co., Abbott-Detroit; J. P. Schneider, Chevrolet; Havers Motor Car Co., Havers; King Motor Sales Co., King: Foster Motor Sales Co., Stevens-Duryea and Imperial; Perret-Barber Motor Sales Co., Detroiter; Thomas J. Doyle, Saxon; LaVigne Cyclecar Co., La Vigne; Scripps-Booth Cyclecar Co., J. P. Rocket and Packet; Mercury Cyclecar Co., Mercury; Cricket Cyclecar Co., Cricket; Hawk Motor Car Co., Hawk; Detroit Cyclecar Co., Detroit.

Electric vehicles: Detroit Electric Garage, Detroit; Century Electric Car Co., Century; Grinnell Electric Car Co., Grinnel; Electric Automobile Co., Standard; Edward I. Rumsey, Ohio; Harry L. Walker Co., Woods.

Commercial vehicles: Buick Motor Co., Buick; Standard Auto Co., Packard; Thompson Auto Co., Wagenhalls, Federal and Universal; Studebaker Corp., Studebaker; General Motors Truck Co., G. M. C.; Star Tribune Motor Sales Co., Tribune, Star and O. K.; International Harvester Co. of America, International; Pull-More Motor Truck Co., Pull-More; Commerce Motor Car Sales Co., Commerce; Kelly Truck Co., Kelly.

Accessories: Armitage Leather Co.; Chas. E. Miller; Wayne Oil Tank & Pump Co.; Paragon Refining Co.; Sewell Cushion Wheel Co.; Sears-Cross Co.; Indian Refining Co.; White Star Refining Co.; Automobile Supply Co.; Farmer Mfg. Co.; Jackson-Church-Wilcox Co.; M. & S. Gear Co.; National Refining Co.; Cleveland Worm & Gear Co.; H. W. Johns-Manville Co.; Visco Motor Oils Co.; Acme Enameling & Japanning Co.; The Fidelity & Casualty Co.; National Can Co.; W. E. Wandersee Co.; Harley-Davidson motorcycles.

#### Light Inspection Now Teetor-Harley.

What was the Light Inspection Car Co., of Hagerstown, Ind., is now the Teetor-Harley Motor Co. The change is one of name only and is designed to convey a better idea of the nature of the business conducted by the concern. Originally it built a light railway inspection car but during recent years the manufacture of gas engines for automobiles and piston rings has occupied an increasing share of its attention. The officers of the company are: J. H. Teetor, president; H. W. Keagy, vice-president; C. N. Teetor, secretary; W. E. Immel, treasurer. Arrangements are being made for a three-story addition, 144 x 36 feet, to the plant

## VETERANS GIVEN PRIZES AT PITTSBURGH'S EXHIBIT

"One-Lung" Winton of 1900 Oldest
Car in "Reliability" Promoted
by Dealers—Used Cars
Displayed.

There are some pretty old cars in and about Pittsburgh, and most of them still run and run well. The Pittsburgh (Pa.) Automobile Dealers' Association discovered that fact when it decided to offer prizes for the hoariest veterans that should be driven to that organization's annual show, which was opened in what for the time has been styled Motor Square Garden, on Monday night, 19th inst. Altogether, some six limping—some of them did not limp so much, after all—veterans appeared, and they caused much laughter and much wonder.

Promptly at two o'clock each car was started on its trip around the show building, and all but one, a Panhard of the vintage of 1898, which had been run all over town the previous Sunday, successfully negotiated the trip; the Panhard suffered a bad attack of stage fright and refused to budge. First prize, which was \$100, went to Bingle & Wain, of Ellwood City, Pa., who entered a 1900-model single-cylinder Winton; the car had been driven over the roads to Pittsburgh.

Both second and third prizes went to 1902-model single-cylinder Oldsmobiles, driven by F. C. Randall and J. C. Bryan, respectively; Randall had his choice of a Klaxon horn, a Jones speedometer, a Banker windshield or a \$1,000 accident policy, and Bryan had second choice. G. A. Speer won fourth prize with another Oldsmobile, almost as old, and J. W. Brown carried off fifth prize with what is believed to be the first four-cylinder Franklin model-a machine with a side crank. Sixth prize went to H. S. Anderson with an almost extinct model Cadillac. Bryan's aged machine, by the way, has to its credit a "championship" record; in a race at Schenley Oval, years ago, its driver won and attained a speed of no less than 33 miles an hour!

Nor was all the innovation outside the show, which in the concrete holds some 50 different makes of pleasure vehicles, to say nothing of a fair representation of accessories. For the first time at any show there is an exhibit of used cars which attracted almost as much attention on opening night as did the exhibits of new cars. A partial list of exhibitors is as follows:

Pittsburgh Haynes Automobile Co, Haynes and Krit; Buick Motor Co., Buick; L. G. Martin & Son, Jeffery; White Co., White; The Klinger Co., Ohio electrics, Palmer-Singer and Imperial; Forbes Motor Car Co., Maxwell, Stutz and Henderson; W. W. Bennet Motor Car Co., Pope-Hartford; Oakland Motor Co., Oakland; Painter-Dunn Co., Overland; King Motor Sales Co., King; Pittsburgh Chalmers Co., Chalmers; Oakmont Motor & Boat Co., Wahl.

#### Seeks Old Dealers' Association.

If anyone knows where the New York Automobile Trade Association can be found, the City of New York would like the information; the association owes the city \$28.96, according to a judgment which was filed in the New York county clerk's office this week, but William C. Poertner, who was once a director of the organization and who is the man served in the suit, says he doesn't know who is going to pay the judgment.

The judgment grew out of a tax of \$8.78 which was placed on the association's stock and surplus of \$500 in 1910 and which was never paid; costs and interest have brought it to \$28.96. The association was the first automobile dealers' association in the metropolis, but when the present and later New York Dealers' Association was formed the old one apparently expired.

#### Trustee Sues for "Discovered Asset."

E. D. McCulloch, trustee in bankruptcy for the Midland Motor Co., of Moline, Ill., has filed suit in the Federal court in Peoria against the Moline Pressed Steel Co. to recover alleged preferential payments. According to the complaint, the defendant was a creditor to the extent of \$1,156.68, of which sum \$367.71 was paid in cash and later an automobile, valued at \$2,400, was turned over to be sold and the proceeds applied to the account. It is charged that after the car was sold about \$1,000 remained to the credit of the Midland Motor Co. but was appropriated to the use of the Pressed Steel company. The amount now figures on the trustee's schedules as a "discovered asset."

Nyberg Finally Forced to Surrender.

Henry Nyberg, who owned the bankrupt Nyberg Automobile Works in Anderson, Ind., has abandoned hope of saving his enterprise. He has been unable to raise the necessary funds and, as a result, the property shortly will be offered for sale by the receiver. Nyberg himself will probably remove to Canada.

## BALTIMORE SHOW SET IN SOUTHERN SMILAX BOWER

Forty-six Different Brands of Gasolene and Electric Cars Displayed by 35 Dealers—Record Attendance at Opening.

Graced by the presence of no fewer than two ex-governors, the Baltimore (Md.) Automobile Club's annual show was opened to the strains of martial music on Tuesday night, 20th inst., and almost from the swinging of the wide doors of the Fifth Regiment Armory, which houses the show, a record crowd surged in and out among the exhibits; the show is to hold the boards until Saturday night, 27th inst.

The list of exhibitors is a long one and under the names of 35 dealers there appear some 46 different brands of pleasure cars, including a fair representation of the silent-moving electrics. And over them all there hangs a lattice work ceiling which is more Southern smilax than it is lattice work. The rest of the decorative scheme consists of gold and white bunting streamers stretched from the ceiling to the balconies, and whole bales of American flags. The lamps that shed a genial glow over the show are partly hidden in the lattice work. The complete list of exhibitors is as follows:

White Motor Car Co., White pleasure and commercial; Zell Motor Car Co., Chalmers, and Rauch & Lang electrics; Poehlmann Automobile Co., Cole, Chandler and Chevrolet; Locomobile Co. of America, Locomobile; Winton Motor Car Co., Winton; Lambert Automobile Co., Hudson; Cook & Fletcher, Stanley steamer; L. M. Vordemberge Motor Co., Pathfinder; Ditch, Bowers & Taylor, Detroit electric; Haynes Motor Sale Co., Haynes, King and Auburn.

Wastwick Motor Co., Ford; Franklin Motor Car Co., Franklin; Carl Sperer's Sons Co.; Beehler & Ogden Motor Co., Napier; Auto Sales Co., Oldsmobile and Carnation; Motor Car Co., Overland and Stevens - Duryea; Auto Outing Co., Buick; Charter Automobile Co., Havers; F. W. Sandruck, Jr., Palmer-Singer; Gilbert A. Wehr, Reo; Model Automobile Co., Apperson; Schali-Crouch Co., Paige-Detroit; Standard Motor Co., Cadillac and Fayette; Foss-Hughes Co., Pierce-Arrow; Oakland Motor Co., Oakland; Rice Garage, S. G. V.; Mar-Del Mobile Co., Metz; Rittenhouse-Winterson Auto Co.; Colonial Motor Co., Stearns-Knight and Studebaker; Walter Scott, Premier and Marmon; Maxwell Motor Co., Maxwell; Club Garage, Mercer; Mitchell Auto Co., Mitchell; Imp Cyclecar Co., Imp cyclecar.

Ward Leonard's Anti-Dazzling Device.

Between the demand of the law, on one hand, for automobile lamps that will not dazzle, and the demand of the driver, on the other, for powerful pencils of illumination, lamp makers have been stirred to great efforts, and as a result there are not a few dimmers, shields, auxiliary lamps and other schemes for satisfying everyone concerned. Not the least effective, and one of the most recent, is the "Nodaz" of the Ward Leonard Electric Co., of Bronxville, N. Y.

The "Nodaz" is essentially a shield of semi-transparent material interposed between the lamp and the lens when a subdued light is needed. The shield is operated by pressing a button on the dashboard, alternate pressures making the light soft for city and sharp for country driving.

To describe it more in detail, the shield is made of leaves of semi-transparent celluloid pivoted just back of the lens and connected to a magnet housed between the reflector and the lamp case, where it is well protected. When the shield is open to pass the full light of the lamp, the leaves stand edgewise in the beam, so to speak-or perpendicular to the lens, so that they do not obstruct the light. When closed the whole face of the lens is covered. While the light is so soft as to be entirely within the laweven close examination by the police fails to reveal any fault-it is bright enough for driving under all ordinary conditions. In fact, the makers state that it is quite bright enough for country driving at ordinary speeds. The price of the outfit is \$15.

Waltham vs. Keene to Highest Court.

The Waltham Watch Co., of Waltham, Mass., has appealed to the United States Supreme Court from the decisions of the United States District Court for the Southern District of New York and the Circuit Court of Appeals for the Second Circuit, which held that its price maintenance contract with Charles A. Keene, a New York City jeweler, is in restraint of trade and illegal; Keene was sued by the Waltham company for cutting the price on a Waltham watch, an act prohibited in a contract which the company attached to the sale of its products. The Waltham company claims its case differs from others recently decided and that its procedure is within the protection of the patent laws, although price licensing has been forbidden.

#### WILSON PRESSES BUTTON TO OPEN CAPITAL'S SHOW

Incandescents Twinkle, Bells Jingle and Immense American Flag Unfurls at President's Release—The Exhibitors.

To his long list of achievements in other fields President Woodrow Wilson has added one more. He pressed the button that made known to more than 2,000 spectators, already assembled in Convention Hall, on Monday night, 20th inst., that the Washington (D. C.) Automobile Dealers' Association's annual show was open and all ready for business.

The pressing of the button, be it added, not only switched on the electric lights but unfurled an immense American flag as well, and set jingling a couple of score of electric bells disposed about the big hall. And the bells will jingle every night, in conjunction with the Marine Band, which furnishes the music, until Saturday, 27th inst., when the show will pass on into history.

The decorations of the show are far more ornate than they ever have been in the past. The color scheme is gold and white, great streamers linking the ceiling and the side walls in a way to hide their nakedness. Festoons of Southern smilax hang from the topmost points in the ceiling and great baskets of the same foliage overhang at intervals down the broad main aisle. The spaces are marked off by white posts carrying four radiating arms hung with miniature incandescent lamps. A partial list of the exhibitors is as follows:

William P. Barnett & Co., Pullman; Cole Motor Sales Co., Cole; Henderson-Rowe Auto Co., Chevrolet; Probey-Haynes Motor Co., Haynes; Emerson & Ormer, Detroit electrics and Apperson gasolene cars.

Mitchell-Lewis Motor Co., Mitchell; Hudson Automobile Co., Hudson, and Argo electrics; Regal Sales Co., Regal; T. Lamar Jackson, Stevens-Duryea; Chesley & Harveycutter, supplies; Krit-Washington Co., Krit; Miller-Dudley Co., Gray & Davis lamps and electrical apparatus; Irving T. Donohue, accessories and supplies.

Hupp Motor Car Co., Hupmobile; R. E. Lankford, Indiana trucks; Congressional Garage, Wilcox trucks; Warrington Motor Car Co., Palmer-Singer; W. L. Smith Co., Detroiter; Davis Motor Car Co., Davis; A. H. Gregory, marine motors; Barber & Ross, supplies.



#### Priming Device at Popular Price.

From the point of view of the engine itself, prompt starting is just as important when the engine is cranked by electricity, air or a spring as when the driver has to swing the crank. For this reason priming devices have by no means gone out of fashion—rather, they are more numerous than ever. One of the most recent, which is shown in the accompanying illustration, is about to be offered for sale by the Ideal Brass Works, of Tenth street and Canal, Indianapolis, Ind.

It is of the pressure type, having a small hand-pump which attaches to the dashboard of the car, a broad flange being cast on for the purpose The outward stroke of the pump draws in gasolene from the main feed line and the inward stroke forces the fuel in a fine spray into the intake manifold above the carburetter. Of course, the amount of the priming charge can be varied to suit the atmospheric conditions, and prompt starting can be made almost a certainty even in cold weather-so far as the fuel is concerned. The fact that the gasolene is mixed with air in the spraying helps vaporization not a little. The primer is neat in appearance, can be installed easily by almost anyone, with but few tools and without soldering, and costs \$3.

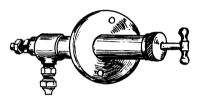
#### Dunham's Piston Ring Departure.

Good service though the older types of piston rings have rendered—and still are rendering, for that matter—efforts to improve upon them are numerous, and much ingenuity has been displayed in eliminating slight leaks and providing for wear and expansion. One of the simplest and most ingenious of the newer rings is the Duplex ring, manufactured by M. L. Dunham of 140 W. 52nd street, New York. As a matter of fact, the Duplex ring, while really a simple affair, is difficult to describe; but a glance at the accompanying illustration will make it fairly plain.

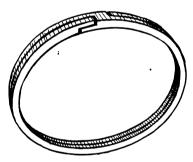
The ring is made in a single piece and has two convolutions. Where the ends come almost together, as the picture shows, there is an offset in which lap joints are formed, each end having its lap on the offset. If a ring should be

straightened out it would be found to consist of a strip offset at the middle, as if two strips were joined by being overlapped slightly.

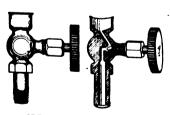
The effect of this construction, so far as leakage is concerned, is that in order to get through gas must enter at one joint, pass entirely around the circle and emerge at the other joint—providing, of course, that the ring is properly fitted



IDEAL "ZERO" PRIMER



DUPLEX PISTON RING



IDEAL SCREW PET COCK

at all points And, apart from the fact that such a circuit would be practically impossible, the joints are so closely fitted as to allow no leakage The ring is free to expand, as is an ordinary ring, but it has a more even and effective pressure on the cylinder walls, according to the makers Expansion is said to have no effect on the gas-tightness of the Duplex piston ring.

#### Improvement of the Priming Cock.

There is no doubt that a careful man can keep the priming cocks of his car in good condition if they are good to start with; but it also is a fact that the priming cocks on a car that has been used for any length of time are, as a rule, battle-scarred veterans, bearing marks of having been hammered to tighten the plugs and persuaded to open with pliers—and most everyone knows how often the handles are broken off short by such mistreatment.

All this sort of thing is unnecessary, according to the Ideal Brass Works, of Tenth street and Canal, Indianapolis. Ind., which has offered, as a remedy, the priming cock shown in the accompanying illustration. The device is simple in the extreme, consisting of a solid body with drilled passages, a plug of the needle type with a fiber handle, and a packing nut. It is stated that the valve will remain tight under all conditions. the well-seated needle affording the best possible means of making a tight closure. It cannot get too tight and stick, but can be operated with the thumb and finger, and the fiber disk will remain cool when a brass handle would be too hot to touch. The cocks cost 25 cents each or \$1 for a set of four.

#### Will Supply "Dope" for Gasolene.

The Power Gas Products Co. is the imposing title of an enterprise that has established an office in the Plymouth Building in Minneapolis. It proposes to supply a liquid "dope" which, it is claimed, will add mileage to gasolene. The officers of the company are: C. E. Wallerstedt, Swedish vice-consul, president; R. B. Brandle, secretary of the St. Paul Roofing, Cornice & Ornament Co., vice-president, and F. H. Phelps, secretary.

#### Prussian Blue for "Marking."

When scraping in bearings it is customary to use either red lead or Prussian blue for "marking" to indicate the high spots. Prussian blue is preferable, however, because it is of finer texture than the red lead and works more smoothly. It is mixed with oil in exactly the same way as the lead and is used in the same way.

## WRENCH DIVERSITY THAT MAKES FOR PROFIT

## Non-Adjustable Types That Reveal as Much Variety as Adjustable Ones —How One Dealer Profited by Pushing the Sale of Such Tools— Solid-End, Socket and Alligator Wrenches Contrasted.

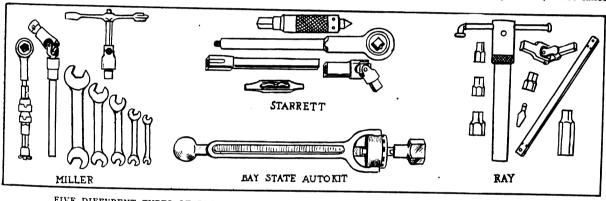
Of the making many books there is no end; and the same can be said for the great tribe of automobile tools that are encompassed by the term wrench. The variations that are possible and that have been made by various manufacturers by way of fitting such tools for special purposes is truly astonishing. For in addition to the score or more of different types of adjustable wrenches—monkey and otherwise—that were illus-

inviting. This is the time for judicious missionary work.

A garage proprietor on the broad Coney Island Boulevard in Brooklyn, N. Y., has a good scheme for increasing his profits by the sale of small tools. He is popular with his patrons, for he encourages them to make use of his shop and his equipment. He is always ready with a hint or a helping hand, and therein lies the reason for much of his success. Gen-

suggest their own merits. But such things never suggest their own merits unless they are placed where prospective purchasers cannot fail to see them.

For the dealer, garageman or repairshop man who contemplates stocking wrenches, there is almost infinite variety from which to choose, as already has been made plain. General utility wrenches always are in demand and, next to the monkey wrench, the so-called



FIVE DIFFERENT TYPES OF SOCKET WRENCH SETS FOR WHICH DEMAND MAY BE STIMULATED

trated and described in the last issue of Motor World, there is an easily equal number of other types that come under the non-adjustable head; there are alligator—or crocodile—wrenches, socide head wrenches, ratchet wrenches, socket wrenches, offset wrenches, and several other types that are combinations of one or more of these types, and all of them hold out to the dealer, the garageman and the repair-shop man the same opportunities for increased profits that are offered by the adjustable type.

The wideawake garageman or repair-shop man in particular should find a ready sale for wrenches—or for any other small tools, for that matter—for the demand for such tools almost invariably arises in a garage or a repair-shop where the owner of the car does his tinkering; attends to the slight adjustments that continually become necessary in even the best of cars. Few adjustments of the kind become necessary or are made on the road: the work is "saved up" to be done in the garage, perhaps on a rainy afternoon when the roads are not

erally his hints concern the peculiar adaptability of a certain style of wrench or other small tool. If the hint is not taken readily he quietly gets the wrench, for instance, from his stock, and proceeds to demonstrate just how well it will do the work that the owner is doing but indifferently well with a wrench of another kind more suitable for other work. The sequel to the impromptu demonstration generally is the tinkle of the cash register bell. Each wrench or other small tool disposed of may represent but a few cents profit, but this garageman knows that it is the little things that count.

#### Necessity for Proper Display.

As for the supply dealer, there is no necessity for pointing out his opportunities for disposing of small tools of the wrench tribe or any other tribe. It is an axiom of the trade that goods well displayed are half sold, and there are few accessories that have a greater appeal to the average person than wrenches, ingenious or otherwise, that

alligator, or crocodile wrench—it gets its name from its gaping jaws—probably is applicable in a greater number of ways than any other single type. There are few places where it is impossible to use an alligator wrench, for, though it is not adjustable in the usual sense, it nevertheless will fit practically any nut and also will hold pipes and other round articles that an ordinary wrench will not grip. Without doubt, it is an excellent emergency tool to put in any repair kit.

A great many manufacturers produce alligator wrenches and there probably is greater variety in this one type than the average individual would expect. The Bonney, for instance, which is produced by the Bonney Vise & Tools Works, of Allentown, Pa., is thoroughly representative of the class. It is forged of special steel and properly tempered and comes either black or nickeled. The picture makes plain that the wrench has different sized jaws and in the four sizes in which the tool is made it will grip nuts or pipes ranging in diameter from ¼ inch to 1¼ inches.

The "Bull Terrier" wrench produced by the Whitman & Barnes Mfg. Co., of Akron, O., is somewhat like the Bonney, the difference, shown by the picture, being principally in the shape which is designed to afford the operator a good grip and to permit the tool to be used in restricted places. The small end of the "Bull Terrier" will hold round articles from ½ inch to ½ inch in diameter and the large end will hold articles from ½ inch to ¾ inch in diameter. The jaws are oil-tempered and the wrench is lacquered after being finished.

#### Combined Wrench and Screw Plate.

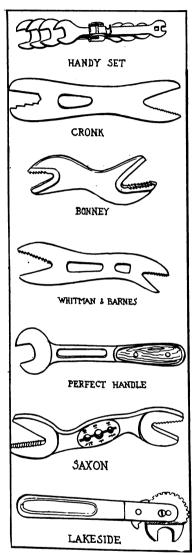
The Saxon alligator wrench, which is made by the Kilborn & Bishop Co., of New Haven, Conn., although still in the same class is a tool of somewhat wider applicability. In addition to being an ordinary alligator wrench which will hold round or square articles ranging in diameter from 1/4 to 3/4 inch, it is also a miniature screw plate. The three threading dies that are made integral with the central portion will rethread bolts 5/16 x 18 thread, 36 x 16 thread and 1/2 x 13 thread. One noteworthy feature of the tool is that the dies are countersunk on one side so that they will run onto bolts that have been battered at the end. Needless to add, the tool is dropforged, hardened and tempered.

Manifestly, it is not always good practice to use an ordinary alligator wrench on nuts and bolts, particularly where they are in conspicuous positions, for the sharp teeth of the wrench are likely to cut into the surface and mar it. To obviate this trouble, the Cronk & Carrier Mfg. Co., of Elmira, N. Y., has developed the wrench that is illustrated herewith, one end being especially designed for square and hexagonal nuts and the other end for round articles. The wrench is made in two sizes, the smaller of which will turn set screws or nuts from 36 to 56 inch in diameter and pipes up to 34 inch, and the larger will turn nuts from 1/4 to 3/4 inch and round articles up to one inch in diameter. In another style, both ends are made to accommodate only nuts or set screws.

#### Variety in Solid End Wrenches.

Solid end wrenches, which are also styled engineer's wrenches, though the former is the more familiar designation, always have been popular and probably always will be; they are, without doubt, the simplest of all wrenches, and the slight drawback apparent in the necessity for using a separate wrench for every different sized nut or set screw is more than offset by their convenience

and their strength, and the fact that as there is no adjustment it is impossible for them to get out of adjustment. Wrenches of the kind are made separately and in sets by a great number of makers, some of the more prominent being such well-known firms as J. H. Williams & Co., Brooklyn, N. Y.; Billings &



NON-ADJUSTABLE WRENCH VARIETY

Spencer, Hartford, Conn.; the Starrett Co., of Athol, Mass.; the H. D. Smith Co., of Plantsville, Conn., and Chas. Miller of Syracuse, N. Y. By way of making plain the number of sizes and shapes of such wrenches that are produced, suffice it to state that the Williams company alone produces more than 800 sizes of these wrenches in no fewer than 40 different patterns.

Obviously, however, no automobile

owner, and very few fully equipped repair shops would ever have occasion to use 800 different size wrenches-to say nothing of the 40 different styles. But the variety exists for the choice of the garageman, the dealer or the repair-shop man. Actually, an automobile owner requires only about six different sizes of solid-end wrenches to fit practically all of the nuts and bolts on his machinethat is, to fit the ones that ordinarily require adjustment. These are the standard S. A. E. sizes from 1/4 to 1/8 inches. Sets of wrenches conforming to those most used sizes are produced by all of the makers previously listed. Generally a canvas roll, or a leather one, is provided to hold the set, at a slight additional cost-45 cents for a canvas roll in the case of the Williams company, for example.

#### Wooden Handle That "Stays Put."

These solid-end wrenches generally are one-piece wrenches with metal handles. The Smith company, however, makes a departure in that it provides its wrenches with wooden handles and they are handles that not only are comfortable to the touch but are guaranteed to "stay put." The metal part of the wrench is a drop-forging and the wood, which is treated to make it waterproof, is fastened in underneath metal caps at the ends so that it cannot split and cannot come out. Needless to add, the wrenches are made in practically every size. The Lakeside Utility wrench, which is produced by the Lakeside Forge Co., of Erie, Pa., is another departure from usual practice in the production of solid end wrenches. The part that slips over the nut or bolt is rotatable and is held at an angle that is most convenient by a little pawl. Reversing the pawl reverses the wrench. The head part is removable and the four jaws that complete the set can be set to no fewer than 14 different angles. The total length of the wrench, which is packed in a canvas roll together with the four jaws, is eight inches. The jaws can be supplied in the usual S. A. E. standard sizes.

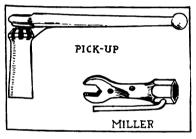
#### Keeping Wrench Sets Together.

The Harris & Reed Mfg. Co., of Chicago, Ill., is another company that produces wrenches in considerable variety, the type that is illustrated herewith being styled the "Handy Set" by virtue of the fact that it is nine wrenches all in one. As the picture makes plain, the four double-end wrenches are firmly clipped together though any of the four can be quickly extracted for use and as quickly returned to its proper place. The ar-

rangement provides for handy means of carrying the wrenches in the tool kit, prevents them rattling around among other tools and keeps them all together. All the wrenches are finished in full nickel and the set weighs just 10 ounces.

#### Advantages of Socket Wrenches.

Ever since wrenches have been used on automobiles, the versatile socket wrench has proven a general favorite and there are abundant reasons why this should be so. In the first place, where there is no room to "swing" an ordinary wrench a socket wrench is about the only kind that can be used. In the second place, there are always a number of nuts and bolts that cannot be touched with an ordinary wrench for the reason that there is not room for the head of the wrench: here again the socket wrench gets in its good work. And, last but not least, it is practically impossible, with a socket wrench that fits properly to mar the head of a bolt or a nut.



SPARK PLUG WRENCHES

A great many makers produce wrenches of this style, too, and there is nearly as much, if not quite as much, variety among them as there is in other styles of wrenches. In addition to other combination sets, the Walden Mfg. Co., of Worcester, Mass., markets the set illustrated herewith, which is produced especially for the owners of Ford cars. As the picture makes plain, it consists of eight steel sockets, a ratchet handle, which is simplicity itself, an extension bar and a universal joint. The sockets are made to fit practically all of the nuts on a Ford car and the whole outfit is neatly boxed in a fiber case measuring 103/4 x 23/4 x 21/2 inches; the outfit weighs 31/2 pounds. Other Walden-Worcester sets also are produced, up to the largest size, which has three ratchets and some 13 assorted steel sockets.

The Ray socket wrench set—it is made by the Packer Auto Specialty Co., of Chicago, Ill.—has been designed to fit into a very small space, though its mere size is no indication of the limit of its usefulness. It differs from the Walden in several respects, the most prominent

being the arrangement of the handle, which is quite clearly shown by the picture. In addition to the handle, which is nickel plated and highly polished, there is a long extension bar, two shorter extension bars, a universal joint, two screwdriver bits, 10 case-hardened cold drawn steel sockets and one spark plug socket four inches in length. The whole set is furnished either in a small oak case or in a leather tool roll. This set, like other sets of the kind, includes sockets for the various sized nuts that experience has taught are most likely to require adjustment. In a larger size of Ray set, there are all the parts enumerated previously, but instead of 10 sockets there are 30.

#### Wrenches with Ratchet Handles.

The Bay State Autokit, which is distributed by Geo. A. Cutter of Taunton, Mass., is an ingenious member of the socket wrench class. It has a reversible ratchet handle which may be slipped over either of two long extension bars which, in turn, fit any of a number of sockets; in one assortment, for instance, there are 10 sockets of popular sizes, and in another there are 13 sockets. In addition, there is a universal joint and a special socket to fit spark plugs. One interesting feature of the tool is that the extension bar is fitted with a knob at its top which forms a convenient handle to steady the tool and apply the necessary downward pressure. Both sets are packed in substantial wooden cases, well finished and sightly.

No representative array of wrenches would be complete, of course, without mention of the products of the L. S. Starrett Co., of Athol, Mass. The Starrett company is one of those that produce all sorts and varieties of wrenches for all sorts and varieties of work. The set of socket wrenches that is illustrated herewith has been developed especially for automobile use and is rather more complete than any of the others for the reason that in addition to being a complete set of socket wrenches it is also a ratchet drill. The set complete consists of the ratchet handle together with an extension bar and universal joint, a spark plug socket, a drilling attachment which takes standard square shank drills from 1/8 to 1/2 inch in diameter, a screwdriver with a reversible end and several adjustments to go with the drilling attachment. There are 28 assorted steel sockets to fit square and hexagonal headed nuts.

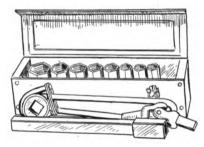
The Miller set of socket wrenches, produced by Chas. Miller, of Syracuse, N. Y., includes also a set of five solid end wrenches in sizes most in demand by the average car owner. The socket wrench

part of the set consists of a ratchet handle with an extension bar and universal joint and six sockets to fit hexagonal nuts from 1/4 to 1/2 inch in diameter. The whole set comes packed in a neat canvas roll with compartments for each of the parts.

A spark plug wrench is a tool that every car owner must have, and because of the fragile nature of the porcelain insulation in spark plugs there are few wrenches that are more satisfactory to use than are socket wrenches. Consequently, there are few socket wrench sets that do not include one socket especially for the spark plugs. At the same time, most manufacturers produce spark plug socket wrenches to sell separately, two widely different types, of the many that are made, being illustrated herewith.

#### Tools to Take Out Spark Plugs.

The Miller spark plug socket wrench scarcely requires any description, for it is shown quite clearly by the picture;



WALDEN WRENCH SET

suffice it to state that the open wrench end is the same size as the socket, and the socket may be either 36, 1 or 136 inches in diameter. The wrench is furnished either galvanized or nickeled.

The Pick-up spark plug wrench, which is made by the New Britain Mfg. Co., of the Connecticut town for which it is named, is a ratchet device, as its name implies. In operation, the handle is raised to disengage the ratchet from the slot. Obviously, the wrench will work equally well in either direction and the socket is deep enough to accommodate any length of plug. The socket is made to fit the standard spark plug and the handle is seven inches in length.

#### Short Circuit Difficult to Trace.

One of the most difficult causes of the grounding of an electric current to trace is the touching of a stray strand or two of a flexible cable on some grounded part of the car. The fineness of the strands makes it difficult to see them and the uncertainty as to the location of the ground also helps to make the matter a puzzle. The moral points itself.

#### STORAGE BATTERY TERMS AND WHAT THEY STAND FOR

Nomenclature That is Little Understood Made Plain-Misnomers Pointed Out and Alternatives Suggested.

In giving what may be rightly termed an unusually comprehensive description of the average lead storage battery, which term, by the way, he apostrophizes as being a misnomer, for as generally is known but too seldom considered, the storage battery does not store electricity, W. H. Conant, of the Gould Storage Battery Co., in a paper entitled "Storage Batteries" that was read before the winter meeting of the Society of Automobile Engineers, left little to the imagination regarding either the construction or the operation of these parts of the modern automobile that have come to be so essential to the illumination and starting of the car.

"Accumulator" or "secondary battery" are terms much to be preferred, he said. and by way of lifting the fog that obscures many other terms that are used in connection with such matters, he appended a glossary to his paper, which, by reason of the now widespread use of the storage battery for lighting and starting purposes, should prove quite as valuable to those connected with the gasolene car industry as it will to those in the allied electric car industry. Conant's glossary, which is the most valuable part of the paper, is as follows:

Acid: Term frequently used to describe the liquid in cells, in place of the more correct one-Electrolyte.

Active Material: The "formed" paste which fills the grid.

Ampere-Hours: Product of amperes and hours.

Battery: Any number of cells when connected and used together.

Box (or case): Container for starting and lighting type cells.

Bridge (or rib): Wedge-shaped vertical projections from bottom of rubber jar on which plates rest and by which they are supported.

Burning: A term used to describe the operation of joining two pieces of lead by melting them at practically the same instant so they may run together as one continuous piece. Usually done with mixture of oxygen and hydrogen gases or hydrogen and compressed air.

Cadmium: A metal used in about the shape of a pencil for obtaining voltage of positive or negative plates. It is dipped in the electrolyte but not allowed to come in contact with plates.

Capacity: The rating of cell or battery in ampere-hours, qualified by the rate or time of discharge.

Case: (See Box.)

Cell: Unit of storage battery practice; consists of element, electrolyte and

Circulation: Movement of electrolyte vertically and horizontally with relation to plates; caused by difference in specific gravity and temperature. (See equalization.)

Concentration: Change in specific gravity of electrolyte from charging and discharging action.

Connector: Solid or flexible part for connecting positive pole of one cell to negative pole of another, etc., or to terminal.

Cover: Cover for cell to retain electrolyte and exclude foreign material.

Condensation: The result of spray striking vent-cap and cover.

Cycle: One charge and discharge.

Density: Specific gravity.

Developing: The first cycle or cycles of a new or rebuilt battery to bring about proper electro-chemical conditions to give rated capacity.

Diffusion: Pertaining to movement of acid within the pores of plates. (See Equalization.)

Dry: Term frequently applied to cell containing insufficient electrolyte.

Electrolyte: The conducting fluid of electro-chemical devices; for lead-acid storage batteries consists of about two parts of water to one of chemically pure sulphuric acid, by weight.

Element: Positive group, negative group and separators.

Equalization: The result of circulation and diffusion within the cell which accompanies charge and discharge. Difference in capacity at various rates is caused by the time required for this fea-

Equalizing: Term used to describe the making uniform of varying specific gravities in different cells of the same battery, by adding or removing water or electrolyte.

Evaporation: Loss of water from electrolyte from heat or charging.

Expansion Chamber: Receptacle for overflow of electrolyte, resulting from heat expansion and increase in volume.

Forming: Electro-chemical process of making pasted grid or other plate types into storage battery plates. (Often confused with Developing.)

Foreign Material: Objectionable sub-

Gassing: The giving off of oxygen at

positive plates and hydrogen at negatives, which begins when charge is something more than half completeddepending on the rate.

Gravity: Common term for specific gravity.

Grid: Cast or stamped frame work in which active material is retained.

Group: Any number of positive or negative plates properly joined together.

Hold-Down: Device for keeping separators from floating or working up. Sometimes also applied to car parts used to hold battery in place.

Jar: Container for element and electrolyte. Usually of so-called hard rubber.

Life: Length of useful service obtainable from cells expressed in cycles, ampere-hours, and sometimes miles or vears.

Lug: Vertical projection from grid for connecting with and burning to strap. Mud: (See Sediment.)

Non - Sulphating: Expression sometimes used to describe quality of battery which from its very nature is erroneous.

Over-Charge: Continuance of charge beyond that apparently or supposedly necessary to improve condition of cells.

Over-Discharge: The carrying of discharge beyond proper cell voltage; shortens life if carried far enough and done frequently.

Paste: The mixture of lead oxide or spongy lead and other substances which is put into grids.

Plate: The combination of grid and paste properly "formed." Positives are reddish brown and negatives slate gray.

Polarity: In common usage refers to the proper connection of cells, positive to negative, and to that of charging source, positive to positive.

Post: The vertical cylindrical part of strap which receives connector.

Potential Difference: Abbreviated P.D. Found on test curves. Synonymous with voltage.

Rate: Number of amperes for charge or discharge. Also used to express time for either.

Rib: (See Bridge.)

Ribbed: (See Separator.)

Reversal: That which occurs to voltage readings when cells are discharged below a certain critical point or charged in the wrong direction.

Reversibility: Referring to the accumulator principle whereby the two opposite chemical actions take place with equal facility in either direction.

Sealing: Making tight joints between jar and cover; usually with a black. thick, acid-proof compound.

#### MOTOR WORLD

Sediment: Loosened or worn-out particles of active material fallen to the bottom of cells; frequently called "mud." Sediment Space: That part of jar between bottom and top of bridge.

Separator: An insulator between plates of opposite polarity; usually of wood, rubber or combination of both. Separators are generally corrugated or ribbed to insure proper distance between plates and to avoid too great displacement of electrolyte.

Spray: Fine particles of electrolyte carried up from the surface of gas bubbles. (See Gassing.)

Strap: That part to which all plates of one group are burned.

Sulphate: Common term for lead sulphate. (Pb SO4.)

Sulphated: Term used to describe cells in an under-charged condition, from either over-discharging without corresponding long charges or from standing idle some time and being self-discharged.

Sulphate Reading: A peculiarity of cell voltage when plates are considerably sulphated, where charging voltage shows abnormally high figures before dropping gradually to normal charging voltage.

Terminal: Part to which outside wires are connected.

Tip: Thin, soft rubber cap put on over vent-cap to further reduce loss of spray and retard sloppage.

Tray: Wooden frame or box in which cells are assembled to form one section of vehicle battery.

Vent or Vent-Cap: Hard or soft rubber part inserted in cover to retain atmospheric pressure within the cell, while preventing loss of electrolyte from spray. Wall: Jar sides and ends.

Washing: Removal of sediment from cells after taking out elements; usually accompanied by rinsing of groups. replacement of wood separators and renewal of electrolyte.

Watts: Product of amperes and volts.
Watt-Hours: Product of amperes,
volts and time in hours.

#### Chafed Pipe that Increased Consumption

One very excellent reason for a really marvellously high gasolene consumption has been made plain by a motorist with considerable experience. A slightly stronger smell of gasolene than usual that floated on the atmosphere of his garage prompted an investigation that revealed a chafed fuel feed pipe. The pipe, which is a comparatively long one leading from a rear gasolene tank to the carburetter, evidently had vibrated almost continuously while the car was on the road, with the result that where it

touched against the chassis frame at one spot it had worn a tiny hole in itself. When the hole was soldered and the pipe so fastened that it could not vibrate, the gasolene consumption of the car decreased by something like one-half.

#### Gemmer-Detroit Adds Garage Pumps.

In developing a pair of air storage pumping outfits, the Gemmer-Detroit Starter Co., of Detroit, Mich., which just has placed on the market a pneumatic starter, has borne in mind the necessity for quick operation as well as a rugged-



GEMMER-DETROIT GARAGE PUMP

ness of construction that will effectually withstand the rough handling of the average garage attendant. To this end, the electric motors have been made of such size and are so geared that the tank of the larger outfit can be pumped up to 175 pounds pressure in 20 minutes; 150 pounds pressure can be obtained in the smaller tank in 18 minutes.

Both outfits are of the portable type and operate from any electric light socket. In the larger outfit, which is intended for large garages, the pump has four aircooled cylinders measuring 11/2 x 13/4 inches and the tank is of sufficient capacity to inflate fully 15 standard 34 x 4inch tires without operation of the pump; the smaller outfit is equipped with a twin-cylinder pump with cylinders measuring 11/2 inches square; the capacity of the tank is sufficient to inflate six 34 x 4-inch tires. A distinctive feature in the construction of the outfits is the construction of the running gear, which consists of heavy metal strips welded directly to the tanks; the wheels, which are swivelled to these strips are shod with rubber tires. The handle is held in an upright position by means of a spring catch. As indicating the care that has

entered into the construction of the pumps, it is pointed out that carefully finished cast iron pistons fitted with piston rings are used, the connecting rod bearings being bronze and the crankshaft ground to size.

#### Gas and Electric Costs Compared.

Although comparative operation costs of gasolene and electric vehicles are difficult to obtain, the Indianapolis (Ind.) post office authorities just have compiled some satistics which shed interesting light upon the question. When the parcels post law went into effect, it was found necessary to supplement the delivery service of the post office, and for this purpose two Waverley electric delivery wagons were rented. They were placed in service along with two "gas" delivery wagons, which later were removed from the service as a result of the cost investigations made by the department.

It was found that whereas the gasolene vehicles were delivering 136 packages in 135 stops during the 81/2-hour day, the electrics were delivering 271.5 packages in 189 stops during a 7-hour day; the mileage of the gasolene vehicles was 45.6 and of the electrics, 18.75. The cost of the day's run in the case of the electrics figured out at \$5.60, whereas the gasolene vehicles cost \$8.50. The stops per mile were 2.94 in the case of the "gas" vehicles as against 6.02 for the electrics and the cost per stop in cents was 6.36 for the gasolene cars and 3.26 for the electrics. The actual cost per parcel delivered worked out at 6.30 cents with the "gas" cars and 2.06 cents with the elec-

#### How Wrenches Should Not Be Used.

A word with regard to the use of the wrench-any wrench-which probably is one of the most abused of all garage tools. In the first place, the jaws must always be so set that there is no "play" between them and the nut they hold; this will prevent wear of the jaw faces and also saves the nuts. In the second place, the strain must always be in the direction the jaws point; if a wrench is used the other way the tendency is to break one or the other of the jaws off. And, last but not least, the leverage obtainable with a given size wrench should never he increased by increasing the length of the handle, the most convenient means of doing so being to slip a length of pine over it. Wrenches are made strong enough to sustain the load put upon them at the radius permitted by their length. Hence, if they are temporarily lengthened, it cannot be expected that they will "stand ap" under the unusual strain.



1,074,235. Spring Wheel. Roddie C. Behrends, Easton, Ill. Filed Jan. 2, 1912. Serial No. 669, 063. (Helical springs between inner and outer rims.) 2 claims.

1,074,238. Lock for Automobiles. Albert Austin Bennett, Los Angeles, Cal. Filed June 19, 1913. Serial No. 774,710. (Lock for holding lever in neutral.) 3 claims.

1,074,246. Vehicle Tire. John T. Clark, Provo, Utah. Filed Nov. 29, 1912. Serial No. 734,203. (Tire with internal floating spring bands.) 2 claims.

1,074,290. Spring Wheel. Samuel James Poyner, Pierson, Manitoba, Canada. Filed Sept. 3, 1912. Serial No. 718,410. (Wheel with curved spring spokes.) 1 claim.

1,074,341. Gearing for Motor Vehicles. Eugene Harold Avery, Bradgate, lowa. Filed Oct. 19, 1911. Serial No. 655,548. (Four-wheel drive system.) 2 claims.

1,074,389. Lap Robe. George Sullivan, New York, N. Y. Filed May 19, 1911. Serial No. 628,334. (Lap robe to be wrapped around user.) 2 claims.

1,074,500. Clutch Construction. Powell Evans, Philadelphia, Pa. Filed May 8, 1912. Serial No. 696,010. (Multiple disk clutch.) 3 claims.

1,074,527. Headlight Control for Automobiles. Harvey W. Potts, Longmont, Col. Filed March 28, 1913. Serial No. 757,462. (Headlight controlled by steering gear.) 1 claim.

1,074,599. Electric System for Operating Speed-Varying Power Transmission. Ralph W. Bradley, Fort Collins, Col. Filed Jan. 28, 1913. Serial No. 744,640. (Gear-shifting mechanism operated by electric motor.) 19 claims.

1,074,635. Internal-Combustion Engine. Louis A. Marcotte, Beverly Cove, Mass., assignor of one-half to William Herd, Beberly Cove, Mass. Filed July 15, 1912. Serial No. 709,553. (Turbine with separate compression cylinders.) 7 claims.

1,074,658. Shock Absorber. Charles N. Sowden, Guantanamo, Cuba. Filed Sept. 11, 1912. Serial No. 19,739. (Spring and friction shock absorber.) 7 claims.

1,074,748. Steering-Gear. Marcus D. Satterlee, Andover, and Nellie C. Satter-lee, Williamsfield, Ohio. Filed Oct. 3, 1912. Serial No. 723,729. (Steering system with jointed car frame.) 3

1,074,762. (Automobile Cut-Out. Raymond T. Whipple, San Jose, Cal. Filed July 15, 1912. Serial No. 709,500. (Ratchet-operated exhaust cut-out.) 1 claim.

1,074,774. Automobile Windshield. Guy B. Collier, Kinderhook, N. Y. Filed Aug. 8, 1910. Serial No. 576,090. (Windshield with oppositely curved upper and lower sections.) 25 claims.

1,074,777. Distributer for Electrical Ignition Systems. Anton Diemer, Stuttgart, Germany, assignor to The Firm of Robert Bosch, Stuttgart, Germany. Filed March 28, 1913. Serial No. 757,-332. (Timer for dual ignition system.) 9 claims.

1,074,787. Vehicle and Like Wheel: George F. Godley, Philadelphia, Pa. Filed July 18, 1912. Serial No. 710,194. (Steel disk wheel.) 1 claim.

1.074,790. Engine-Starting Apparatus. Edward A. Halbleib, Rochester, N. Y., assignor to Northeast Electric Co., Rochester, N. Y., a corporation. Filed July 8, 1910. Serial No. 571,099. (Electric starting system.) 6 claims.

1,074,838. Automobile Marker-Bracket. David H. Cox, Roselle, N. J. Filed April 18, 1911. Serial No. 621,958. (License bracket clamped to radiator cap.) 4 claims.

1.074,839. Lock-Joint for Windshields. Joseph F. Curry, Newark, N. J., assignor to Ulysses G. Clark, New York, N. Y. Filed April 10, 1913.

Serial No. 760,231. (Friction joint tightened by thumb-nut.) 2 claims.

1,074,840. Protector for Pilot-Lights. Harrison H. Davenport, Tropico, Cal. Filed Feb. 27, 1913. Serial No. 751,151. (Shield to keep wind off steam boiler pilot light.) 3 claims.

1,074,894. Two-Stroke Cycle Explosion Motor. Francois Pilain, Lyon, France. Filed Dec. 13, 1912. Serial No. 739,500. (Two-cycle sleeve-valve motor). 7 claims.

1,074,947. Chain-Casing for Automobiles. Harry C. Heath, San Francisco, Cal. Filed July 24, 1912. Serial No. 711,346. (Chain-case with removable cover.) 4 claims.

1,074,958. Lock Joint for Windshields. Alexis Krah, New Haven, Conn., assignor to The English and Mersick Co., New Haven, Conn., a corporation. Filed April 19, 1913. Serial No. 762,253. (Friction joint with thumb-nut.) 1 claim.

1,074,975. Keyless Automobile Clock. Wilson E. Porter, New Haven, Conn., assignor to The New Haven Clock Co.. New Haven, Conn., a corporation of Connecticut. Filed Jan. 11, 1913. Serial No. 741,398. (Clock with external winding ring and internal gear.) 8 claims.

1,074,984. Spark-Timer. Harold M. Scheibe, Wilkinsburg, Pa., assignor to Westinghouse Electric & Míg. Co., a corporation of Pennsylvania. Filed Nov. 8, 1911. Serial No. 659,220. (Primary contact maker with rotatable casing.) 5 claims.

1,074,990. Starter for Internal Combustion Engines. William R. Strickland, Cleveland, O., assignor to The Peerless Motor Car Co., Cleveland, O., a corporation of Ohio. Filed Jan. 5, 1912. Serial No. 669,552. (Starter-gear control system.) 12 claims.

1,075,061. Motor-Plow. Joseph Nicholas Parker, Bedford City, Pa. Filed Sept. 7, 1912. Serial No. 719,131. (Steering mechanism for two-wheeled motor plow.) 15 claims.

1,075,088. Motor-Vehicle. James Wesley Bruce, Ozark, O. Filed Sept. 17, 1912. Serial No. 720,883. (Motor truck with extensible frame.) 1 claim.

1,075,130. Concealed Hinge. John F. Streberger, Detroit, Mich., assignor of one-half to Edward L. Ackerman, Detroit, Mich. Filed Sept. 28, 1912. Serial No. 722,811. (Hinge working in recess in door frame.) 5 claims.

1,075,163. Internal-Combustion Engine. Napoleon B. Simpson, Foxboro, Mass., assignor of 49-100 to Marshall T. Davidson, Brooklyn, N. Y. Filed Aug. 23, 1912. Serial No. 716,769. (Motor with two overhead rotary valves.) 6 claims.

1,075,168. Elastic Road-Wheel. Jacobus Spyker, Amsterdam, Netherlands. Filed Aug. 13, 1910. Serial No. 576,945. (Wheel with compressed air cushions.) 7 claims.

1,075,241. Wheel. Thomas L. Cook, Logan, Okla. Filed May 7, 1913. Serial No. 766,161. (Wheel with spokes having internal springs.) 2 claims.

1,075,328. Transmission Gearing. George W. Bulley, Chicago, Ill., assignor to The Mercury Mfg. Co., Chicago, Ill., a corporation of Illinois. Filed June 3, 1912. Serial No. 701,146. (Individual clutch system). 7 claims.

1,075,345. Pneumatic Tire. Frederick C. Feiker, Racine, Wis. Filed April 1, 1912. Serial No. 687, 805. (Cellular inner tube and valves.) 2 claims. 1,075,347. Blow-Out Holder. Frank Fourt, Friefald 1.

Fairfield, Ia. Filed Sept. 7, 1912. Serial No. 719,-253. (Laced blow-out patch.) 1 claim. 1,075,351. Cooling System for Internal-Combustion Engines. Leslie S. Hackney, tS. Paul, Minn. Filed May 31, 1912. Serial No. 700,656.

(Forced circulation of air through cylinder jackets.) 6 claims.

1,075,377. Automobile Wheel Help. Francis V. Phillips, Orlando, Fla. Filed June 11, 1913. Serial No. 773,021. (Fabric strip to be anchored

to ground to afford traction.) 6 claims.

1.075,412. Clutch. Justus B. Entz, Philadelphia, Pa. Filed Aug. 11, 1905. Serial No. 273,

745. (Clutch-operating mechanism.) 2 claims.

1,075,415. Compensation Device for Vehicle Suspension. Rene Guillery, Aubervilliers, France, assignor to Societe des Etablissements Malicet et Blin, Aubervilliers, France. Filed March 25, 1913. Serial No. 756,757. (Leaf springs connected by equalizing levers.) 6 claims.

1,075,429. Stop-Cock for Motor-Vehicles. Jean Mazuel, Paris, France. Filed Feb. 3, 1912. Scrial No. 746,056. (Combination lock principle applied to multiple-plug cock.) 4 claims.

1,075,42. Rotary Valve for Explosive-Engines. Cyrus E. Mead, Dayton, O., assignor to The Mead Engine Co., Dayton, O., a corporation of Ohio. Filed Oct. 6, 1911. Serial No. 653,100. (Rotary valves with adjustable driving gear.) 14 claims.

1,075,498. Connecting Means for Springs in Vehicles and the Like. Jacques Minette de Saint Martin, Paris, France. Filed Oct. 10, 1912. Serial No. 725,015. (Helical auxiliary springs of the shackle type.) 2 claims.

1,075,501. Demountable Rim for Pneumatic Tires. Robert P. Scott, Cadiz, O. Filed March 14, 1911. Serial No. 614,476. (Demountable rim with cut-away disk fasteners.) 4 claims.

1,075,545. Explosive Engine. Joseph F. Buhr, Detroit, Mich., assignor, by meane assignments, to Herman B. Strate and Joseph F. Buhr, Detroit, Mich. Filed Feb. 7, 1911. Serial No. 607,059. (Engine with gas-measuring supply pump.) 4 claims.

1,075,555. Indicating Device for Vehicles. Mildred Felix, New York, N. Y. Original application filed April 28, 1906, Serial No. 314,261. Divided and this application filed Feb. 23, 1907. Serial No. 358,801. (Printing device attached to wheel and marking on road surface.) 1 claim.

1,075,557. Automobile Construction. Henry Ford, Detroit, Mich. Filed July 21, 1909. Serial No. 508,779. (Ford chassis construction). 12 claims.

1,075,578. Internal-Combustion Engine. Frederick O. Kilgore, Somerville, Mass. Filed Dec. 28, 1911. Serial No. 668,287. (Rotary valve motor.) 3 claims.

1,075,580. Internal-Combustion Engine. Harry Austin Knox, Springfield, Mass. Filed July 16, 1912. Serial No. 709,638. (Sleeve-valve motor.) 1 claim.

1,075,628. Automobile. Augustus W. Crane, Kalamazoo, Mich. Filed June 3, 1912. Serial No. 701,124. (Body-raising system operated by motor of car.) 12 claims.

1,075,650. Transmission-Gearing. Russell Huff, Detroit, Mich., assignor, by mesne assignments, to Packard Motor Car Co., Detroit, Mich., a corporation of Michigan. Filed Oct. 25, 1909. Serial No. 524,461. (Control mechanism for sliding gears.) 20 claims.

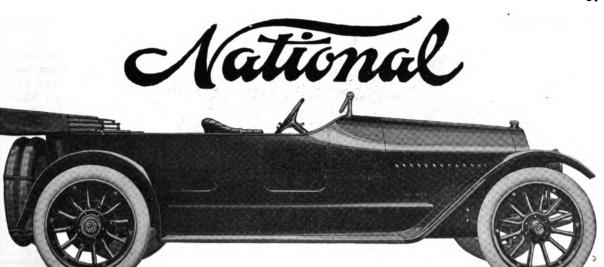
1,075,655. Wheel. Karsten Knudson, Grand Rapids, Mich., assignor, by direct and messe assignments, to Electric Wheel Co. (Associates). Springfield, Mass. Original application filed May 24, 1912, Serial No. 699,583. Divided and this application filed Jan. 6, 1913. Serial No. 740,337. (Disk wheel with enclosed electric motor and gearing.) 4 claims.

1,075,664. Vehicle Wheel. Axel Herman Miller, Chicago, Ill. Filed April 17, 1912. Serial. No. 691,489. (Double wheel with inner wheel rolling on inside circumference of outer wheel.) 5 claims.

1.075,666. Locking Device for Gear-Shift Levers of Automobiles. William H. E. Pendleton, Venice, Cal., assignor of one-third to Edward G. Kuster and one-third to Russell B. Carter, Los Angeles, Cal. Filed May 13, 1912. Serial No. 700,903. (Lock attached to H-plate of gear-shifter.) 4 claims.

1,075,667. Face-Shield. Thomas J. Powers, Steubenville, O. Filed Jan. 18, 1913. Serial No. 742,914. (Individual windshield attached to bracket pivoted to cap of wearer.) 4 claims.

1,075,686. Differential Mechanism of Automobile Vehicles. Michael Berthier, Lyon, Franc, assignor to La Societe Nouvelle de la Buire Automobiles, Lyon, France. Filed May 28, 1912. Serial No. 700,172. (Bevel gear differential and brake system.) 3 claims.



## "You don't have to raise the hood"

ATIONAL owners enjoy complete abandon of worry about mechanical parts of their cars. This confidence is found only in the perfected quality of National cars.

W E build whole cars—the name
National guarantees them.
Every National car is built as a
unit—every mechanical part operates harmoniously to produce satisfactory results. You leave the responsibility for the National mechanical construction to our years of experience-forget that there are gears and machinery operating beneath your soft cush-You rest in comfort and give thought only to the ease and joy of motoring.

#### **Brief Specifications-National Six**

Brief Specifications—National Six

MOTOR—Six-cylinder, 3¾ x 5½ inch, cast en bloc. Tire pump, integral part of motor. Clutch, self-contained aluminum cone. Starting and lighting, electric two unit system. Transmission, sliding gear selective type, three speeds forward, one reverse. Gauge 56 inches. Oiling, crank case, constant level, force feed, with gear driven pump. Ignition, high tension, dual magneto with storage battery. Tirea, 36 x 4½. Firestone demountable rims. Air pressure gasoline feed, generated by small pump in crank case. Capacity, 23 gallona, Automatic carburetor. Two sets of brakes on 16-inch rear wheel drums. Bevel gear drive through straight line shalt with universal joints and torsion member. Full floating rear axle. Left side drive. Access all four wide doors. Single lever in center controls all speeds. Half elliptic springs, front, special National construction, rear.

EQUIPMENT—Top complete with side curtains and boot, ventilating rain vision windshield, extra Firestone rim, electric lighting and starting systems 12-in. double bulb electric headlights, electric license tail light, Warner speedometer, electric horn, tools and jack.

National 40

HE National 40 is our staple car. Its years of marvelous success makes it stand out with silhoumakes it stand out with silhouette distinctiveness against the background of all other cars. We believe
this is the best all-round automobile
ever made. We build on the series
basis; every day begins a new year.
We do not upset everything by rushing into yearly models with calendar
seasons. We build on a constant system of improvements.





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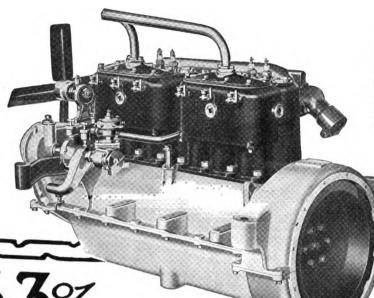
We sell our experience ability, responsibility and our guarantee—not a mere job of assembled wheels, axles, gears and parts. That's why you don't have to raise the hood to buy a National.

#### Lavish in comfort

BEAUTIFUL, economical, efficient and lavish in comfort—this car is the climax of the National's success in car building since its pioneer beginning.

National Motor Vehicle Co., Indianapolis, Ind.

Address.....



Two new Continental models will be exhibited at the Chicago Show-BOOTH 40 COLL-SEUM.

## Increase in 5 Months

BETWEEN the first of July, 1913, and the last day of November, thirty-two manufacturers of Pleasure Cars and Motor Trucks, convinced of the superior qualities and economies of Continental Motors, placed their orders with the Continental Motor Mfg. Co. The day this page is written (Dec. 17, 1913), no longer 60, but more than 90 makers are building toward success upon this sterling product—America's standard motor.

There are profound reasons for this 53% increase—reasons no worthy manufacturer, for his own sake or his dealers', can afford to sidestep. Reasons we are ready, upon invitation, to lay before any Engineer, any Manager, or any Board of Control.

## CONTINENTAL MOTOR MFG. CO.



Largest Exclusive Motor Builders in the World DETROIT, MICH.

Factories DETROIT MUSKEGON

# PER CENT

of all the electrically equipped gasoline cars exhibited at the New York Show contained



## STORAGE BATTERIES

See page 133 of the Automobile of January 8th, 1914, for details of Electric Lighting and Starting Equipment and note the Battery column.

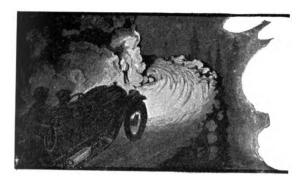
WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd St. Detroit Branch: 1191 Woodward Ave. Chicago Branch: 2241 Michigan Ave. San Francisco Branch: 243 Monadnock Bldg.

Indianapolis Branch: 438 and 439 Indiana Pythian Bldg.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES. CANADA AND MEXICO

(85)



## You must have reliable light on your car!

### Prest-O-Lite

illuminates ALL of the road, spreads its beams to show a sudden turn, shows the path directly in front of the car, gives an even, steady, brilliant light without eye-tiring rings or deceptive shadows. As a practical road light it is far superior to electric light.

### **Prest-O-Lite**

by actual test, is operated at onefifth the cost of any electric system. In addition to the saving in cost, it means a saving in power of your engine which gives your car added efficiency on hills and in emergencies.

### Prest-O-Lite

affords every "press - the - button" convenience, and every light on the car may be lit or extinguished from the seat by the use of the Prest-O-Liter. And should this convenience ever fail, you may still have all the light by the use of a match.

### Prest-O-Lite

—means a steady, reliable, economical supply of powerful light which no electrical system can guarantee. Actual experience is proving this fact every day. The absolute proof is yours for the asking.

The Prest-O-Lite Co., Inc.
287 Speedway, Indianapolis, Ind.
Please send information on all lighting systems to-

### **Electric Lights May Fail** At Any Moment!

You may drive for months and never meet an emergency.

But when the emergency comes, you place your safety-the safety of your passengers-upon your lights.

How is your car equipped to meet YOUR emergency?

Prest-O-Lite for years, on hundreds of thousands of cars, has PROVED its dependability.

Electric lights have proved decidedly unreliable.

A short circuit, the breaking of a delicate connection, a failure to meet a sudden strain, time after time, has resulted in a blinding shock to the driver by the abrupt change from a dazzling beam of light to total darkness. Even if no accident results, there is little hope for a repair—the emergency lamp is gone with the rest of the system—and the only way out is to abandon the car until the expert can get there.

### The Dealer Knows!

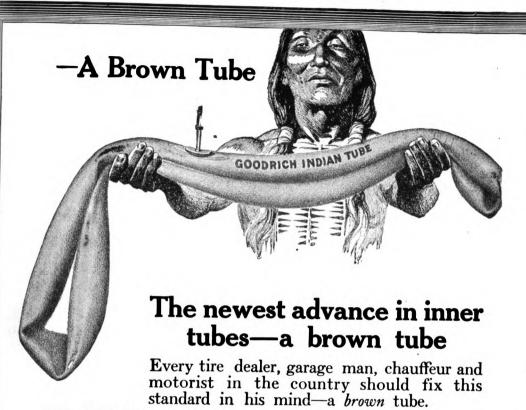
Dealers are aware of these facts. Many of them have sunk a large part of their profits patching up the electrical troubles of their customers. From all parts of the country, dealers have told us the story of their troubles with electricity. If your dealer doesn't tell you what he really knows about electric lighting-let us send you the letters of other dealers and expert electrical repairmen. Ask us.

Use the Coupon

### The Prest-O-Lite Co., Inc. 287 Speedway, Indianapolis, Indiana

(Contributor to Lincoln Highway)

**Exchange Agencies Everywhere** 



Goodrich Tires give the motorist everything science and skill can produce in quality of construction and quality of service.

Now Goodrich, as usual, takes the next step in advance, and improves the *whole* tire service with what every judge of rubber and every judge of construction will say is the last word in inner tubes. We call it the

## Goodrich Indian Tube

We give it this name because it is made of the cream of the finest rubber gathered by the native Indians in the richest rubber country.

It is hardy, enduring, full of vitality—like an Indian.

It is built for speed-like an Indian.

It is brown-like an Indian.

It is the pure breed-like an Indian.

It is "best in the long run"—like an Indian. You'll always know it by its color—copper-

brown, Indian-brown.

The Goodrich Indian Tube will never be judged by the price, nor bought solely

because of the price. Like all Goodrich products it will stand on its perfect quality and its dependable delivery of full service.

The man who buys it will take the Goodrich word for it that his money never before bought such an inner tube as this *brown* tube, the "Indian."

For the dealer it will make that greatest of all business friends—the more-than-satisfied customer.



### The B. F. Goodrich Company

Factories: Akron, Ohio Branches in All Principal Cities

There is nothing in Goodrich Advertising that isn't in Goodrich Goods

## Show The Public The Truth

A Knight sleeve valve motor, the second engine produced by the Moline Automobile Company, and made wholly by American workmen of American materials, has just undergone a brake test of 337 hours in the laboratory of the Automobile Club of America, the severity of which was never before thought of for a high-speed internal combustion engine.

The test was made in the identical laboratory, with the same apparatus and experts, as the 300 hour test of a poppet-valve motor manufactured and entered last May by one of the largest, oldest and best known manufacturers of automobiles in the United States.

The superiority of the Knight motor over the poppet-valve, under exact conditions, was shown by these tests to be so overwhelming that the subject does not even require discussion. Even the most biased poppet-valve maker would not question the matter.

Now, either this motor which set the standard for the poppet-valve was woefully inefficient, or the Knight sleeve valve motor is 50 per cent better than the best poppet.

If other manufacturers of poppetvalve motors entertain the idea that the particular engine of the poppet-valve type tested was **not** representative of the system, it is up to them to prepare a specimen which will equal the record of the Moline Knight and vindicate the poppet.

The Moline Company has issued a challenge to the world and deposited with the Broadway Trust Company, of New York, a certified check for \$10,000 to cover a similar amount to be put up by any manufacturer of poppet-valve cars who thinks one of his motors can equal this performance. The Moline Automobile Company also offers \$1,000 reward to any person who will induce any manufacturer of cars using poppet-valve motors to accept the challenge.

The Knight and Kilbourne Patents Company, owner of the Knight sleeve valve patents, will go a step further and present to any person who will secure such accepter the latest type of car produced by the concern which covers the \$10,000 stakes and places its motor in the Laboratory of the A. C. A. for such 337 hour test, and secures certified results as meritorious as the performance of the sleeve valve motor.

To win this car and the \$1,000 for the finder of the taker and the \$10,000 for the maker of the car.

THE POPPET-VALVE ENGINE MUST RUN CONTINUOUSLY WITHOUT A STOP OF ANY KIND WHATEVER FOR TWO WEEKS (336 hours) developing the same pro-

portion of power for volume and piston speed, as did the Moline-Knight.

IT MUST HAVE NO ADJUST-MENT OF CARBURETOR, MAGNETO, SPARK-PLUG OR ANY-THING ELSE UPON WHICH THE POWER OF THE MOTOR DEPENDS, the record of the Moline-Knight.

IT MUST BE CAPABLE AT THE END OF 336 HOURS OF SHOWING GREATER POWER THAN AT THE BEGINNING OF THE TEST WITHOUT TOUCHING THE CARBURETOR OR MOVING THE THROTTLE, the record of the Moline-Knight.

IT MUST BE CAPABLE, BY SIMPLY ADVANCING THE MAGNETO AND WITHOUT BEING STOPPED OR OTHERWISE ADJUSTED, OF SPEEDING UP TO 1,700 REVS. PER MINUTE AND DEVELOPING FOR ONE HOUR MORE THAN DOUBLE THE POWER OF ITS S. A. E. RATING AT 1,000 FEET PISTON SPEED PER MINUTE, the record of the Moline-Knight.

IT MUST NOT CONSUME MORE LUBRICATING OIL OR GASOLINE PER H.P. THAN THE MOLINE-KNIGHT.

IT MUST OBTAIN A CERTIFICATE OF THE FACT THAT THE MOTOR IS NO MORE NOISY AT THE FINISH THAN AT THE

START, the record of the Moline-Knight.

And last but not least,

IT MUST COME THROUGH THIS GRUELLING TEST IN AS GOOD CONDITION AS IT STARTED, FREE FROM CARBON, ITS WEARING PARTS AND BEARING SURFACES "IN EXCELLENT CONDITION" "WITHOUT PERCEPTIBLE WEAR," the record of the Moline-Knight in the recent test, and the record of the Daimler-Knight in a similar 132 hour test in England in 1909.

If this challenge remains unaccepted, the natural conclusion is that the poppet-valve is not capable of measuring up to this standard of perfection!

Upon the pages following are printed facsimiles of the Official Certificate granted the Moline Company by the Technical Committee of the A. C. A. for this wonderful performance of its Knight motor. Note the comment of the committee, and how many times they allude to the "excellent condition" of the parts after this gruelling test. Then ask your poppet-valve friend why, if his motor will do this, he does not submit it to a similar ordeal and win \$10,000 cash for himself, \$1,000 cash for you and secure for you a present from the Knight and Kilbourne Patents Company one of his latest type cars.

(Continued on next ten pages.)

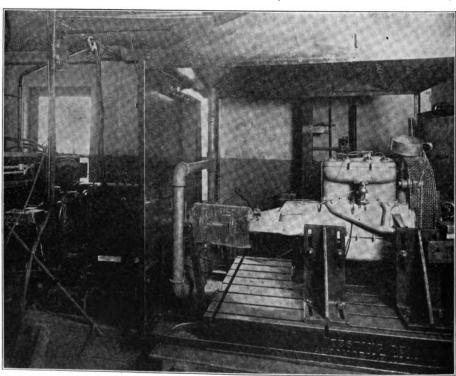
Test No. 12 (10 pages) Page 1

December, 1913

BULLETIN OF THE A. C. A. TESTING LABORATORY

## OFFICIAL REPORT ON 337-HOUR ENDURANCE TEST OF FOUR CYLINDER MOLINE-KNIGHT MOTOR

(Certified Test No. 12)



THE DYNAMOMETER FOR MEASUR-ING THE POWER DEVELOPED.

This is to certify that the Technical Committee of The Automobile Club of America has tested the Moline-Knight motor, manufactured by the Moline Automobile Company, with the following results:

### ENDURANCE RUN.

Power.—The motor ran without any stop whatever for 336 hours with wide open throttle and set spark at an average speed of 1,117 revolutions per minute. During this period the average brake load at one foot radius was 180 pounds, giving a resultant average brake horsepower of 38.3. The lowest horsepower reading for any fifteen minute interval during the entire 336 hours was 36.4. At the end of this period, without stopping motor, the speed was increased, and the motor developed an average of 53.0

THE MOLINE-KNIGHT MOTOR READY FOR THE TEST.

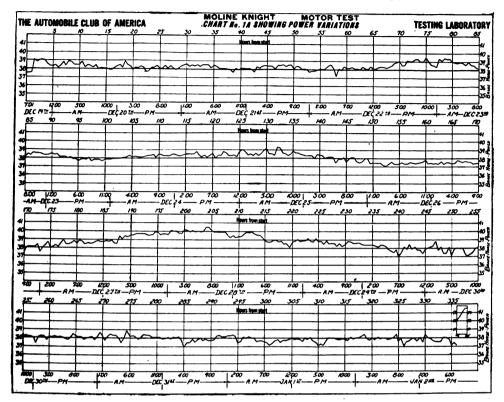
brake horsepower for a period of one hour, while averaging 1,678 revolutions per minute. The variations in power plotted by half hour intervals for the entire run are shown graphically in Chart No. 1A. Averages for five hour intervals are given in Table No. 1.

FUEL.—The total fuel supplied during the run of 336 hours was 10,645 pounds, or 1,744 gallons. It was found at the end of the endurance test, however, that a small hole had been worn through the fuel supply pipe at a point where the latter chafed, due to vibration, against a joint on the crank case. The leakage of fuel from this hole was not discovered because of the rapid evaporation brought about by the blast of air used to cool the crank case. By observation of the fuel curve given in Chart No. 1B,

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it is evident that the rate of fuel consumption gradually decreased for the first 160 hours, and thereafter increased to the end of the test, indicating that the leakage started at or about the 160th hour, and gradually became greater thereafter. The average consumption per hour for the first 160 hours was 31.5 pounds. For the last ten hours of this 160 hours interval it was 30.8 pounds per hour. The actual consumption for the remaining 177 hours of the test is questionable because of fuel leakage.

The gasoline used was taken from the same supply regularly delivered for use in the Club's garage, and gave an average Beaumé reading of 61.6° at 60°F. equivalent to 0.733 specific gravity.

OIL.—The total quantity of oil put into the motor during 337 hours running in the endurance test was taken from thirty-four sealed fivegallon cans, giving a total supply of 170 gallons. A total of seven quarts were taken from the motor during and following the test, leaving a net supply of 168.25 gallons. Throughout the

test oil was overflowing from the flywheel bearing. In fifteen minute runs prior to and following the endurance test, the average overflow was found to be about 0.87 pints per hour. Assuming that the average rate of loss throughout the endurance test was the same as the average loss in the short runs before and after, the total loss in 337 hours would be 36.6 gallons, leaving a net total consumption of 131.6 gallons (967 pounds), or 0.39 gallons per hour.

The oil used was supplied by F. H. Floyd of Detroit, who states that it was compounded from Russian and domestic stock.

### Atmospheric Conditions.

There was a wide variation in atmospheric conditions during the test, the temperature of the air blowing on the motor varying from 37° F. to 71° F., with an average of 57° F., while the barometer varied from 28.95 inches to 30.19 inches of mercury, with an average of 29.83 inches. It was noted that the power of the motor increased and decreased as the barometer rose and fell.

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#### BULLETIN OF THE A. C. A. TESTING LABORATORY

### FUEL VARIATIONS IN ENDURANCE TEST

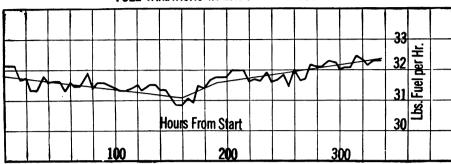


CHART NO. 1B.

ADJUSTMENTS.—The only adjustments made on the motor during the endurance run had to do with the fan and its driving belt. At the 131st hour the fan stopped, due to heating from slipping belt and gummy oil. The fan was removed, bearing cleaned and fan and belt replaced. At the 179th hour, belt was so loose that it hit the fan blades and jumped off. In applying a new belt

the thin outer rim of the V-pulley was broken and the belt was removed. The fan (which is one piece with pulley) was removed at 182nd hour. During the 326th hour a new fan and belt were put on, but the belt jumped off after about ten minutes running, and was not replaced until after the endurance run.

TABLE NO. 1.—ENDURANCE TEST.

Average Power and Fuel Consumption by Five-Hour Intervals.

	Avera	_	I	oline Per P. Hr.			Avei	_	P	oline er P. Hr.		•	Aver	_	Gaso Pe B. H. F	•
Hour.	R. P. M.	B. H. P.	Lbs.	Gals.	From	our.	R. P. M.	B. H. P.	Lbs.	Gals.	From Ho	ur. O	R. P. M.	B. H. P.	Lbs.	Gals.
0 5 6 10 11 15 16 20 21 25 26 30 31 35 36 40 41 45 50 56 60 60 61 65 66 70 71 75 76 80 81 85 86 90 101 105 106 110	1118 1114 1119 1112 1110 1110 1113 1112 1108	38.5 38.3 38.2 38.4 38.0 38.2 38.4 38.0 38.1 38.5 39.0 38.6 38.5 39.0 38.6 38.5 39.0 38.6 38.5 38.6 38.5	83 83 83 83 83 83 83 82 83 82 82 82 82 82 82	.136 .136 .136 .136 .136 .136 .136 .136	111 116 121 126 131 136 141 151 156 161 171 176 181 194 196 201 206 211 206	115 120 125 130 135 140 145 150 155 160 170 170 185 190 195 200 205 215 220	1113 1116 1115 1121 1122 1118 1116 1120 1123 1116 1115 1118 1114 1114 1114 1114 1114 1117	38.4 38.4 38.7 38.7 38.3 37.8 37.4 37.5 37.4 37.5 38.5 39.6 39.8 40.1 39.6 39.6 39.6 39.6	82 82 81 81 82 82 82 82 82 83 82 83 82 80 80 80 80	.134 .134 .133 .133 .134 .134 .134 .134	221 226 231 236 241 246 251 256 261 271 276 281 286 291 306 311 316 331 321 321 326 331 321 336	225 230 235 245 250 255 260 265 270 275 280 285 290 305 310 315 320 325 330 336 er and	1114 1109 1114 1108 1112 1114 11115 1114 1115 1112 1122 112	38.9 38.5 38.5 37.9 37.7 38.0 38.1 38.1 38.2 37.9 37.6 37.6 37.8 38.0 37.6 37.8 37.6 37.8 37.6 37.8	.81 .82 .83 .84 .84 .83 .84 .85 .86 .85 .86 .85 .86 .85 .86 .85	.133 .134 .136 .136 .137 .137 .137 .137 .137 .137 .139 .141 .139 .141 .141 .141 .141 .141 .141

<sup>\*</sup>Note—Leak in gasoline pipe probably started at this point. Fuel readings thereafter are probably in error—i. c., too high. See Text and Chart No. 1B.

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### BULLETIN OF THE A. C. A. TESTING LABORATORY

### SHORT RUNS.

Prior to and following the endurance run, a series of short runs were made,—with wide open throttle and spark set for maximum power—to determine the power, friction and fuel consumption of the motor at various speeds. The same carburetor setting employed during the endurance run was used in these runs. The maximum brake horsepower shown in these tests was 53.6 at 1,682 revolutions per minute. The results of these runs are given in Table No. 2, and Chart No. 2.

SPECIAL FUEL EFFICIENCY TEST.—In order to demonstrate the ability of the motor to run with a lower fuel consumption than that shown in the endurance run, and other runs mentionedabove, the carburetor was readjusted, and the motor thereafter subjected to a five-hour run at an average speed of 1,11+ revolutions per minute, and a series of short runs at different speeds. The average brake horsepower for the five-hour run was 39.7, and the average fuel consumption 0.63 pounds (equivalent to 0.103 gallons) per brake horsepower hour. For complete data of these runs see Table No. 3, and the corresponding chart (No. 3).

 $\label{thm:constraints} TABLE\ NO.\ 2.$  Horsepower and Friction at Various Speeds.

	<b>e</b>				G	asoline per	B. H. P. Hr.	Tempera	ture Jacket	Water.
Run.	Duration Mins.	R. P. M.	Torque Pounds Feet.	Brake H. P.	B. H. P. Plus Fr. H. P.	Lbs.	Gals.	In, F.	Out, F.º	Range.
A B C D E F G	5 5 5 5 5	294 499 704 888 1103	Before Endura 184.3 183.8 186.4 179.5 180.0	nce Run. 10.3 17.5 24.1 30.4 37.8	Barometer 19.9 28.9 36.9 46.9	.73 .77 .79 .81	(Fan Belt .120 .126 .130 .133	79 79 85 85	133 147 160 157	54 68 75 72
F G H A1	5 5 5	1284 1480 1693	175.5 171.5 161.2 After Endurar	42.9 48.4 52.0 ice Run.	44.3 	.85 .83 .81 .80 29.91 Ins.	.140 .136 .133 .131 (Fan Belt (		157 162 165 171	81 85 . 85 89
Bi Ci Di Ei Fi Gi Hi	55555555555555555555555555555555555555	1682 1488 1307 1194 909 682 486 292	167.5 172.7 184.3 190.6 190.6 188.0 170.6 176.9	53.6 49.0 45.8 40.1 33.0 24.4 15.8 9.8	57.2 48.8 39.2 28.5 18.3	Leaky Gasolin Pipe. No Correct Fuel Readin Obtaine	t gs	66 65 69 80 81 85 89	164 157 160 160 160 160 160 160	98 92 91 80 79 75 71 67
	Spark set	for maxi	mum power a	t each spe	ed.					

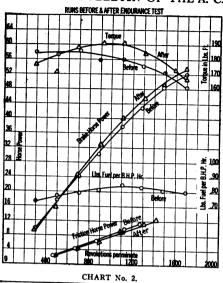
FRICTION H	ORSEPOWER.
------------	------------

	Зef	ore Endur	ance Run.			Afte	r Enduranc	e Run.	
Run.	Duration Mins.	R. P. M.	Torque Pounds Feet.	Fr. H. P.	Run.	Duration Mins.	R. P. M.	Torque Pounds Feet.	Fr. H. P.
J K L M N O P Q	2 2 2 2,5 2 3 2 3	468 673 865 1113 1267 1371 1098 676	26.3 34.7 39.4 47.2 47.2 46.7 43.6 32.0	2.3 4.4 6.5 10.0 11.4 12.2 9.1 4.1	J1 K1 L1 M1 N1 O1 P1 O1 R1 S1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	489 697 888 1097 1310 1416 1106 903 697 487	27.8 34.7 37.8 44.1 45.6 46.2 41.5 36.2 31.5 27.3	2.6 4.6 6.4 9.2 11.4 12.5 8.7 6.2 4.2 2.5
_	Mean tem	p. of jacke	t water 104°	F	N	Iean temp.	of jacket	water 97° F.	

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### BULLETIN OF THE A. C. A. TESTING LABORATORY



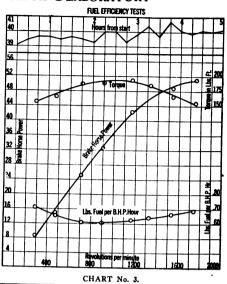
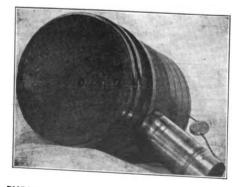
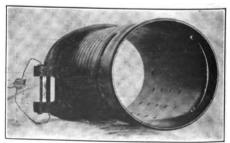


TABLE NO. 3-FULL EFFICIENCY TESTS.

		s	hort Run	s at Va	rious S	peeds.		rrici	ENC			ır Test :	at Cons	stant S	need.
	u	ٺ			Gas B. H.	Cons. P. Hr.	Te Jac	mperat ket Wa	ure ater.	Hou		Aver		Gas	oline . H. P.
Run.	Duration Mins.	R. P. M.	Torque Pounds Feet.	Brake H. P.	Lbs.	Gals.	In, F.•	Out, F.	Range.	From	To	R. P. M.	B. H. P.	Lbs.	Gals.
A2 B2 C2 D2 E2 F2 G2 H2	5 5 5 5 5 5 5 5 7 7	1739 1529 1325 1161 899 706 465 288 rage ba	154.3 167.5 183.3 192.2 189.0 187.0 167.0 158.5 rometer r	51.1 48.8 46.3 42.5 32.4 25.1 14.8 8.7 reading :	.69 .66 .64 .63 .61 .61 .66 .71	.113 .108 .105 .103 .100 .100 .108 .117	93 87 85 93 90 102 102	184 173 176 173 177 174 177 167	ου	Avera Avera Avera	ge Be ge W ge Ja ge Ia	1116 1108 1116 1120 1112 1114 arometer Vater Jac cket Wat	ket—In ter—Ou ter Ran	$= 91^{\circ}$ $t = 17$ $se = 8$	' F. 2° F. 1° F.





PISTON AND PIN AND ONE OF THE SLEEVES. SHOWING EXCELLENT CONDITION AND SLIGHT CARBON DEPOSITS AT END OF TEST.

Test No. 12 (10 pages) Page 6

### BULLETIN OF THE A. C. A. TESTING LABORATORY

VOLUMETRIC EFFICIENCY TEST.—Following the fuel efficiency test the carburetor, with no change in adjustment, was enclosed in an air box, which was clamped between the carburetor flange and the inlet manifold. The sole air inlet to this box was piped to a Venturi air meter, and the air consumption of the motor measured under the following conditions:

- (A) Carburetor in place, motor running under own power.
- (B) Carburetor in place, motor driven by dynamometer.
- (C) Carburetor removed, motor driven by dynamometer.

From the air, power and other measurements taken in this run, the volumetric efficiency and other data given in Table No. 4 and Chart No. 4 were obtained.

### COOLING AND EXHAUST.

During the test thermo-syphon cooling was obtained by connecting the motor to a tank of water placed in approximately the same relative position to the motor as the radiator on the

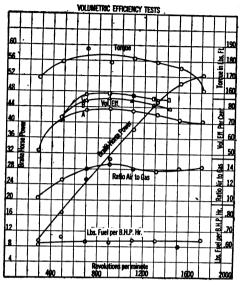


CHART No. 4.

Moline car. Sufficient cold water was added to the warm water in the tank to maintain an average temperature of 85°F. of water entering

TABLE 1	NO. 4	VOLUMETRIC	FEFICIENCY	TECTC

				_			,	1.		ons'n P . P. Hr.			empei Watei			ss. Drop Inlet.
Run.	Dur'n. Mins	R. P. M.	Torque Pounds Feet.	Brake H. P.	Cu. Ft. Air Per Minute.	Pounds Air Per Hour.	Pounds Gas Per Hour.	Ratio Air to Gas.	Lbs.	Gals.	Vol. Eff.	, d	Out.	Air Ent. Carb.	Ins. Hg.	Barome- ter. Ins. Hg.
					En	gine R	unning	Unde	r Own	Power	•					
A3 B3 C3 D3 E3 F3 G3 H3	6 5 5 5 4 5 5	1715 1523 1318 1108 902 701 491 295	160.5 176.0 179.5 181.0 179.0 188.0 179.5 169.0	52.5 51.1 45.1 38.2 30.8 25.1 16.8 9.5	105.2 95.4 87.3 75.3 62.2 48.1 31.2 13.1	478 432 396 341 282 218 141 59	33.5 30.8 28.9 29.3 19.1 •15.6 11.3 5.8	14.3 14.0 13.7 14.0 14.8 14.0 12.5 10.2	.64 .60 .64 .62 .62 .67 .61	.098 .105 .105 .102 .102 .110 .100	70.5 71.4 75.9 78.0 79.0 78.6 72.9 51.0	96 90 89 88 89 94 95 100	183 175 176 173 178 166 172 160	64 57 56 56 56 55 55 55	1.8 1.6 1.5 1.2 1.0 0.8 0.4 0.3	29.28
13	1	1428	Car	buretor	On—I	`hrottle	: Wide-	–Eng	ine Dr	iven by						20.24
J3 K3 L3 M3 N3 O3	1 1 1 1 1	1285 1285 1093 894 692 481			98.8 91.6 80.6 66.5 50.4 30.2						79.2 81.6 84.5 85.3 83.5 72.0	Mea Jack Wa Ten ture 117°	ket ter npera	62 62 62 61 60 60	1.6 1.4 1.2 1.0 0.8 0.4	29.31
P3	,	140#		Car	bureto <b>r</b>	Off—	Engine	Drive	en by	Dynamo						
Q3 R3 S3 T3 U3	1 1 1.17 1 1 1	1405 1275 1101 881 695 486			104.0 94.9 84.6 68.5 53.5 30.2						85.0 85.2 87.9 89.2 88.3 71.3	Mea Jack Wat Ten ture 112°	et er ipera-	58 60 60 60 60 59	0.8 0.5 0.4 0.3 0.3	29.31

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#### BULLETIN OF THE A. C. A. TESTING LABORATORY

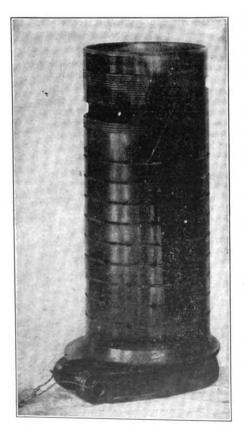
motor. The average temperature of water leaving the motor was 166° F.

The exhaust from the motor was discharged into a short length of  $2\frac{1}{2}$ -inch standard pipe, and thence into an expansion chamber from which it escaped to atmosphere through a long 3-inch vent pipe. The exhaust gas was slightly smoky during a portion of the test.

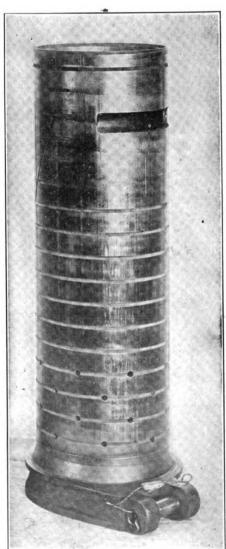
A blast of air, having a velocity of about 34 miles per hour was directed against the crankcase of the motor during the endurance and other runs in which the motor was developing power.

#### CONDITION OF MOTOR.

The motor was dismantled before and after the tests here reported, to permit careful inspection thereof. At the end of the test the parts of the motor were, without exception, in excel-



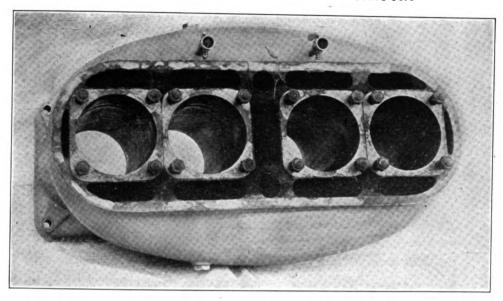
lent condition. There was no perceptible wear on the bearings, sleeves or other parts. The slight irregularities in the sleeves were built up with carbon to form close fitting, glossy surfaces. The ports in the sleeves were not burnt, and there was only a very slight deposit of carbon on the port edges. The cylinder heads and the tops of the pistons showed only a very thin coating of carbon, and only small quantities of carbon were found elsewhere. No shake could be felt



EXHAUST SIDE OF OUTER AND INNER SLEEVES, SHOWING POINTS BUILT UP WITH CARBON AND EXCELLENT CONDITION.

Test No. 12 (10 pages) Page 8

### BULLETIN OF THE A. C. A. TESTING LABORATORY

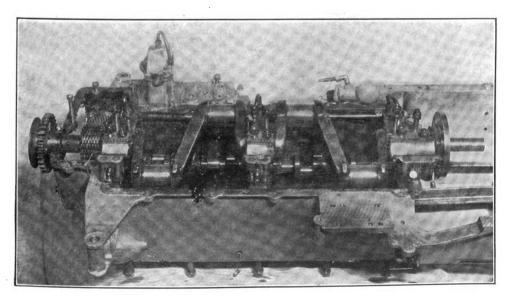


CYLINDER CASTING AS IT APPEARED AFTER ENDURANCE TEST.

in any bearing, and there was every indication of perfect lubrication. There was not a single ring in either piston or cylinder head which was not perfectly free at the end of the test. The running of the motor as regards noise and vibration was not appreciably different at the end of the test from that at the start and early hours.

### PARTICULARS REGARDING MOTOR AND ACCESSORIES.

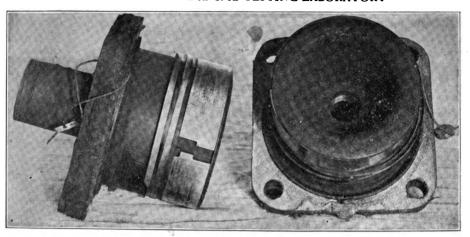
The manufacturers of the motor have filed with the Club an affidavit which states that the motor is a stock model in every particular, including design, material and workmanship, except as to the hot air supply pipe for the car-



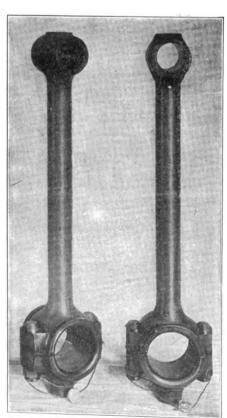
CRANKCASE, CRANKSHAFT, AND BEARINGS AS THEY APPEARED AFTER ENDURANCE TEST—ALL IN EXCELLENT CONDITION. NOTE ABSENCE OF OIL GROOVES IN BEARINGS.

Test No. 12 (10 pages) Page 9

### BULLETIN OF THE A. C. A. TESTING LABORATORY



CYLINDER HEADS AFTER TEST, SHOWING SMALL AMOUNT OF CARBON DEPOSIT.



CONNECTING RODS SHOWING EXCELLENT CONDITION OF GROOVELESS BEARINGS.

buretor, which was not used during the test, and which will be cast integral with the crank-case in all motors, except the first six produced. Of these six the motor tested is one.

The motor is of the four cycle type, and has four cylinders cast in one block with integral gas manifolds. The functioning of the motor is controlled by two concentric sliding valves with inlet and exhaust ports on opposite sides. The sleeves are actuated by short connecting rods, operated from a common eccentric shaft, and have a travel of 1½ inches. The bore of the inner sleeve, in which the piston travels, is four inches, and the piston stroke is six inches. The eccentric shaft and magneto are driven by silent chain from the camshaft.

The weight of the complete motor and parts is given below:

	Pounds.
4 pair sleeve connecting rods, in	cluding
gas tank pressure pump	10.6
4 inner sleeves and pins	36.5
4 outer sleeves and pins	30.4
4 pistons with wrist pins and ring	rs 15.8
4 connecting rods, complete wit	h bolts
and nuts	22.7
4 cylinder heads	27.3
1 cylinder casting, with studs and	nuts 130.4
I cover for cylinder, 4 syphon t	tubes, 4
fibre insulating tubes and	4 lock
nuts and washers	7.8

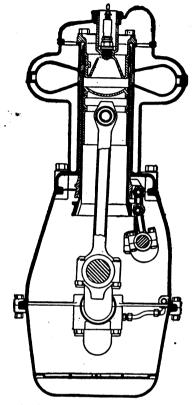
Test No. 12 (10 pages) Page 10

### BULLETIN OF THE A. C. A. TESTING LABORATORY

1 carburetor	6.0
4 spark plugs and gaskets	1.1
1 fan with support and breather cap	7.9
1 flywheel	116.6
Intake water manifold	4.5
Lower half of crank case, bolts and nuts.	31.0
Chain case cover, oil pumps and pipes	9.6
Top half of crank case, including exten-	
sion over clutch and transmission,	•
crank shaft, magneto, magneto wires,	
air pump for gas tank, oil pipes, chain,	
sprockets, bearings, studs and nuts.	23 <b>2.5</b>

Total weight (pounds)..... 690.7

LUBRICATION.—The motor is lubricated by a pressure feed system which operates as follows: Oil is drawn from the sump by a gear pump driven off the end of the eccentric shaft, and is delivered to the three main bearings, and the magneto drive shaft bearing under a pressure determined by the settings of a spring controlled by-pass valve, through which the excess oil is delivered. This excess oil is led to the chain driving the eccentric shaft and magneto, and flows thence to a trough and through a screen to the sump. Part of the oil delivered to the main bearings passes through holes in the crankshaft web to the crank pins, and thence through the tubular connecting rod to the hollow piston pins. From the two ends of the latter it flows to the sleeves and is distributed through holes and oil grooves in the latter over their circumference and the cylinder walls. All parts requiring lubrication not mentioned above are oiled by splash from the crank shaft and connecting rods. The flow of oil delivered under pressure is determined by a valve which is so connected as to open and close with the throttle. This valve was wide open in all tests here recorded. There are no oil grooves in any of the crankshaft bearings. The entire bottom of the crankcase is covered by a screen, through which the oil returns to the sump. On this screen, and in that of the trough mentioned above, there was some carbon and dirt strained from the oil. A similar deposit was found on the chaincase cover under the point where the combined breather and filler are located. The accumulation had evidently not interfered with the lubrication in any way.



TRANSVERSE SECTION THROUGH THE MOLINE-KNIGHT MOTOR.

IGNITION AND CARBURETION.—The carburetor employed was a 1½-inch, nominal size, model R. Schebler, which has a tapered needle whose position in the nozzle is controlled, through a lever connection, by the position of the air valve. No changes in the carburetor setting were made during the endurance test.

Ignition was furnished by a Bosch DU Model 4A Duplex magneto. Four Bosch plugs with heavy three-point electrodes were put in at the start of the test, and none of these were taken out of the cylinder or otherwise disturbed until after the endurance test was completed. The electrodes were partly burned away, so that the gap was increased, but the regularity of firing was notable throughout.

(Signed) F. R. HUTTON,
Chairman Technical Committee.
(Signed) HERBERT CHASE,
Laboratory Engineer.

## NORTHWAY'S MOTOR CAR

### STANDARD OF THE WORLD

The Wise Ones Choose The Crescent (Motor Co.'s) Royal Ohio Models

The Crescent joins together Northway's manufacturing skill with Paxson's selling organization. Time's noblest offspring is the latest. This is Northway's lat-

After years of experience, exhaustive tests and expensive experiments, the greatest of all designers and inventors,



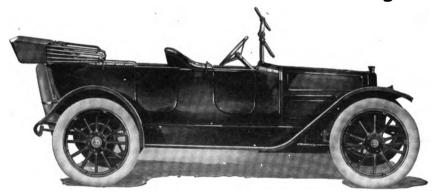
way Motor Co. and original designer of that now famous motor, which is acknowledged by the best engineers and experts to be the greatest motor in the world, now brings out his latest and greatest of all motors, to be used exclusively by the Crescent Motor Co. of Cincinnati. O.

Mr. R. E. Northway, the

founder of the North-

OHIO ON THE MAP

### Northway's Latest and Greatest Crowning Glory



### ROYAL MODEL, \$1,985

MOTOR-Six-cylinder, 4 x 6. AXLE—Full floating on annular bearings.
TRANSMISSION—Four speeds ahead and one reverse. TRANSMISSION—Four speeds ahead and one re CLUTCH—Multiple disc. CONTROL—Center and left hand drive. SPEEDOMETER—Warner, flush. TIRES—35 x 4½ and 36 x 4. WHEEL BASE—132 inches. ELECTRIC STARTER, LIGHTS and HORN. RIMS-Demountable.

### OHIO MODEL, \$1,275

MOTOR—Four-cylinder, 4½ x 4¾.

AXLE—Floating on roller bearings.

TRANSMISSION—Three speeds ahead and reverse.

CLUTCH—Multiple disc.

CONTROL—Center. SPEEDOMETER-Stewart. TIRES—34 x 4, WHEEL BASE—116 inches. ELECTRIC STARTER, LIGHTS and HORN. RIMS—Demountable.

We are now ready to contract with good, reliable, live wide-awake dealers and distributors on this greatest of all lines.

Address All Sales Correspondence to

### THE CRESCENT MOTOR COMPANY

W. T. HUNTER, Pres., Cincinnati, Ohio C. D. PAXSON, Gen. Sales Mgr., 1900 Euclid Ave., Cleveland, O.

BELLAMORE & TOOMEY CO., 10 Bridge St., New York City.



### Save Your Car From Road Rack

Springs are not merely a matter of comfort—they are one of the most vital factors in the life and durability of the car. Springs take the shocks-the vibrations, the stresses, the thrusts from the frame, the radiator, motor shaft, transmission and

The better the springs the more they save your car. The making of perfect automobile springs is such highly specialized work that car manufacturers find it expedient to purchase from the best equipped spring engineers, designers and makers. Our list of patrons is an "Honor Roll" of the foremost American manufacturers. As in all manufactured products, there is a standard of excellence representing the highest development of the spring industry.



From the selection of the ore that is to make the steel to the final tests, every Detroit Spring is given careful supervision and inspection by some of the greatest experts in the country. Every Detroit Spring is especially designed for the make of car to which it is to be fitted

It has its individual, three-fold heat-treatments, determined by the Detroit Steel Products engineering corps.

It is given tests specified by these engineers, and when it is finished, it is truly a part of the car for which it was made, even to the composition of the steel.

Detroit Springs are Guaranteed for Two Years.

Three final tests are given Detroit Springs which subject them to far greater strains than they are likely to get in actual

Their resiliency is proved, their hardness, strength and elasticity. They are, therefore, guaranteed against settling and breakage—the twin troubles of every car-driver.

Look for the Self-Lubricating Cups. On the ends of each leaf are small lubricating cups filled with a long-lived lubricant which is spread between the leaves as they rub one upon the other. This is a feature found in no other springs and forever prevents squeaking.

Write for our new book, finely illustrated, telling the fact-story of Detroit Springs.



FITTING the leaves of the spring together is one of the most delicate processes in spring making. The experts tell when the leaves at perfectly by the "feeling" through the pincers.

These men "fit" the leaves more accurately than any machine could possibly do it. They are high-priced men, but upon perfect fitting depends much of the resilience, life and strength of Detroit Springs.

#### **Detroit Steel Products Co.** 2258 E. Grand Boulevard Detroit, Michigan

Also Manufacturers of Fenesira. Harvey Friction Spring Gear, D. S. P. Drop Forgings, etc.



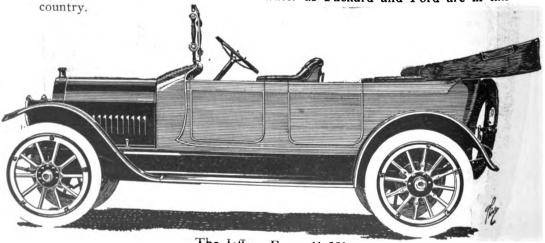
# Check Up The Best Cars In

One of the leading motor car trade journals—Motor Age—says in its last issue, in commenting on the year's developments in the industry:

"One of these is the trend of popular sentiment among the middle class of buyers toward the light, inexpensive car—inexpensive in both first cost and that of maintenance. . . . This trend is one to be logically expected in America at this moment in view of the great strides that are being made in what is termed the 'light cars' in Europe. . . The light car influence has had effect in a reduction in the size of engines. Not all American motor car manufacturers have awakened to this public demand for more economical cars and some of those who have harkened to it, have sacrificed quality, comfort and appearance in order to get economy."

The Thomas B. Jeffery Company was first to sense this cry for economy and its engineering corps, in close touch with the best European engineering practice, not only produced a car which answered that cry, but a car of the very highest quality, beauty of design and comfort to sell at a moderate price.

Because few, if any, of our American manufacturers are building a car equipped with this high speed, high efficiency, bloc type motor—a strictly high grade, light job, we must invite comparison of Jeffery specifications with the best cars of Europe—and that means the world. These names are as familiar to motor car enthusiasts across the water as Packard and Ford are in this



The Jeffery Four, \$1,550

# Jeffery With The The World



Name	Price	Cylinders	H.P.	Igni- tion	Clutch	Trans- mission		Wheel- base	Cool-	Lubri- cation	Control	Tires
Jeffery 4	\$1550	4, En bloc 95.34x133.34	22 5	Bosch	Leather faced cone	4 Sp'ds forward and 1 reverse		116"	Water centri- fugal pump		Left side levers in center	34"x4" or 875x 105
Hotchkiss (French)	Chassis only, \$2400	4, En bloc 95x130	22	Bosch	Leather faced cone	4 Sp'ds forward and 1 reverse	Front I- beam, rear full floating	126"	Water centri- fugal pump	Force feed and splash	Right	34x4½ 880x120
Wolseley (English)	\$2200	90x121.	20	Bosch	Multi- ple disc	4 Sp'ds forward and 1 reverse	Front I- beam, rear full floating	123"	Water centri- fugal pump	Pres- sure feed	Right side	32x4 815x105
(German)	\$3000	4, En bloc 80x130	25	Bosch	Leather faced cone	4 Sp'ds forward and 1 reverse	Front I- beam, rear full floating	124"	Water centri- fugal pump	Force feed	Right side	32x4½ 820x120
De Dion Bouton. (French)	\$2865	4, En bloc 80x140	25 2	Bosch	Friction disc	4 Sp'ds forward and 1 reverse	Front I- beam, rear full floating	130.5"	Water thermo syphon	Force feed	Right side	34x4 875x105
traker Squire (English)	\$2150	4, En bloc 87x120	18	Bosch	Leather faced cone	ward and 1 reverse	Front, H- section stamp- ing, rear full floating	109*	Water thermo syphon	Force and pressure feed	Right side	31x3} 810x100

This chart conveys an eloquent message. It must seem perfectly plain that Jeffery offers American buyers at \$1550 a car in all its essentials as high grade as the best that the world produces at twice the price.

Note that, regardless of price, the specifications of the Jeffery are almost identical with the best European cars.

Jeffery brings to America what Americans are demanding—Economy, comfort, beauty in a motor car built from the highest grade materials and sold at a moderate price.

## The Thomas B. Jeffery Company

Main Office and Works:

Kenosha, Wisconsin



## The Cadillac two-speed direct drive axle is accepted as the most progressive motor car development of the year Press comment abroad and at home makes that perfectly clear It presages the trend of motor car engineering

From The Motor" (Indem)

We have always held the Cadlilae in the Highest esteem, and admired it as a crite-instance of hish-grade American construction. The charm of the dual drive and struction. The charm of the dual drive and served as compelling and entrancing and allowing the clut one merely touches the older lever at the side one merely touches the fittle lever at the side one merely touches the fittle lever at the side of the fittle lever at the side of the merely touches the three transfers of the side of the

It is the all-absorbing topic in American and European trade and engineering circles, and the second award of the Dewar Trophy to the Cadillac has accentuated the intense interest.

And these native and foreign engineers and editors are merely saying in technical terms what the first Cadillac owner you meet will tell you in much simpler language

The owner of a new Cadillac—and more than 7500 of the new cars are now in operation—will tell you in blunt, plain English, that he has never ridden in a car which compared with it.

He may not argue the merits of the two-speed direct drive principle. He will simply say:

"Get in and ride with me and you will agree that you never experienced a sensation so much like floating through space."

And if you do ride, you will agree with him.

There have always been Cadillac owners, thousands of them, who would not concede for a moment that more money could buy a better car.

But there are thousands who go much further now.

They will not admit that any car is comparable in its riding qualities to this new Cadillac.

And there are other things as well which they will not admit.

Above all, they will not admit that there is a car which is comparable in those dominant characteristics which earned for the Cadillac the second award of the honor most sought by European makers—the Dewar Trophy.

That award stamped the Cadillac as possessing in the highest degree, those qualities which make most for all around practicability, for dayin-and-day-out and year-in-and-year-out constancy, satisfaction and service in the hands of the every-day user.

From Motor Aga" (Chicay)

A DOPTION of the two-speed rear axle by one of the larger makers of motor cars for the coming season may be taken as a criterion of the efforts that are general throughout the case of maintenance attained in the case of maintenance attained in the case of maintenance attained in the gear but none the less present. The effect of doubting the number of speeds obtained life of the set is believed to make be worked on a hard motor since it need not, we worked on a high pull or made to turn over, so rapidy as this pull or made to turn over, the increase discussion of the large of the larg

From Horseless Age (Ny)

It seems at least possible that the two speed and a confer upon the four-cylinder car sufficient, flexibility and accelerative ability, without recourse to noisy geared speeds, to saft without recourse to noisy geared speeds, to saft if this should prove to be these qualities and, if this should prove to be their somewhat more for six-cylinder cars, with the case, the demand constly, more butkly, more complicated and less constly, more butkly, more complicated and less constly, more have to be their somewhat more to the doubted and the safe to the care to be considered and less considered and the safe the constitution of the constitu

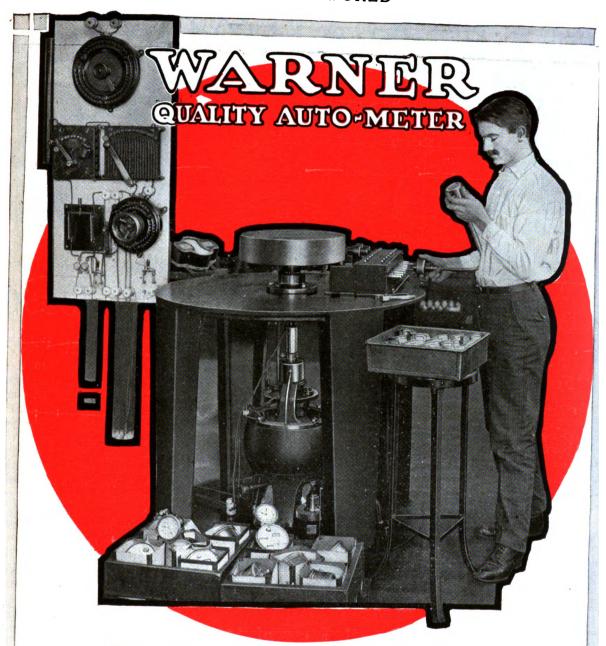
When the Cadillac system of combining ignition, lighting, and engine starting in one electrical system was introduced two years ago, it was very properly regarded as a bold step, and it was certainly the most interesting innovation which had been made to be as time, while experience has shown it to be as time, while experience has shown it to be as successful as it was, bold. To-day the Cadillac beingers have made another innovation, which, personally, we regard as even a greater improvement than the very important one of two years ago.

After once experiencing the delight of two difficult to outline an ideal car which does not difficult to outline an ideal car which does not contain this feature, and we feel fairly safe in discount of an old idea will be followed by other makers.

CADILLAC MOTOR CAR CO., DETROIT, MICH.

2.

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### The \$10,000.00 Accuracy Test

HERE is the machine that has made the Warner HAMO-Meter famous throughout the world for its unfailing accuracy.

This wonderful testing apparatus cost us considerably over \$10,000.00.

On this machine each Warner Auto-Meter is given a most thorough and eventing test.

a most thorough and exacting test.
Each instrument must give unvarying accuracy at

every possible speed.

This costly and ingenious testing apparatus, itself, has never been known to vary the smallest fraction of a mile.

Thus when your car is equipped with a Warner you are assured that you possess the most accurate speed and mileage indicator it is possible to build.

You can have a Warner Auto-Meter on the car you buy if you ask for it.

### Stewart-Warner Speedometer Corporation

Factory: Beloit, Wis. Chicago, Ill.

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## The Marmon "Forty-One"—\$3250

## Marmon "Forty-One"

Six-cylinder engine, 41 to 70 horse power, a marvel of velvety smoothness and silent power. An improvement on the famous automatic, force feed, oiling system originated and developed on Marmon cars eleminates noise by valve mechanism operating in circulating oil bath. 132-inch wheelbase. Three point support for both engine and transmission. Straight line shaft drive and full floating rear axle. 25 gallon gasoline tank and tire holder mounted on frame in rear. Electric starting, lighting, horn, power tire pump and equipment for every requirement. Touring Car for five or four passengers, Roadster or Speedster, \$3,250.00; f. o. b. factory, Indianapolis.

A remarkable, medium-sized six-cylinder car of ample capacity and power to take you over the most difficult roads and grades in comfort—

A car that throttles down to a crawl or goes at breathless speed without gear shifting—

A car of beauty with every convenience and luxury known to motordom—and not a few that have been heretofore unknown—

In all, a car of Marmon quality—the highest expression of real automobile value.

Marmon cars are on display at Space G-2, Coliseum, Chicago Automobile Show.

### Marmon "48"

Six-cylinder, 48-80 h. p., 145-inch wheel-base with short turning ability, eliminating the old objections to long wheel-base. Body types and equipment to meet every requirement. The only big car with small car advantages. Wonderful riding qualities and surpassing power and flexibility. A car developed by years of thorough tests to meet every demand of the exacting buyer.

### Marmon "32"

Four-cylinder, 32-40 h. p., 120-inch wheel-base, body types and equipment to meet every requirement. A rational, logical car for touring and city use. Years of satisfactory service have proved its economy in tires, fuel and upkeep—plus smooth, delightful operation and durability.

Nordyke & Marmon Co.

INDIANAPOLIS (Established - 1851) INDIANA

Sixty Years of Successful Manufacturing

## Hupmobile



The car of The American Family



## BUY TWO CARS AT THE PRICE OF ONE

When you buy a car equipped with a LEWKOWICZ CONVERTIBLE BODY you really get two cars. You have a touring car for pleasant days—and an inside drive as protection against rain, snow, cold, etc., or for use in the evening at the opera, theatre, social calls, etc.

Ask that your new car be equipped with the LEWKOWICZ CONVERTIBLE BODY. No reputable manufacturer will refuse to do this for you—no matter what car you are going to buy.

Or if your car has already been delivered—at a slight additional cost you can equip it with the LEWKOWICZ CON-VERTIBLE BODY and thus enjoy motoring to its fullest extent.

The LEWKOWICZ CONVERTIBLE BODY is the latest advance in the body builder's art. It's delightfully easy to adjust in either direction. No tools are necessary. There isn't a screw, bolt or pin used to make the change. It can be done with white gloves—without soiling them. A delicate lady or even a child can convert this body in either direction.

When opened the LEWKOWICZ CONVERTIBLE BODY has the appearance of any high grade body. When closed it's solid and staunch—absolutely waterproof and cold-proof.

No matter what kind of a car you contemplate owning—or are owning now—you can have a LEWKOWICZ CON-VERTIBLE BODY that will increase its appearance many times. We will be pleased to give you a demonstration—and full description. Write for further details now.

### Ford Owners:

The automobile body shown in the picture above was designed particularly for your use. You bought your car for its convenience, comfort and its adaptability to all sorts of conditions.

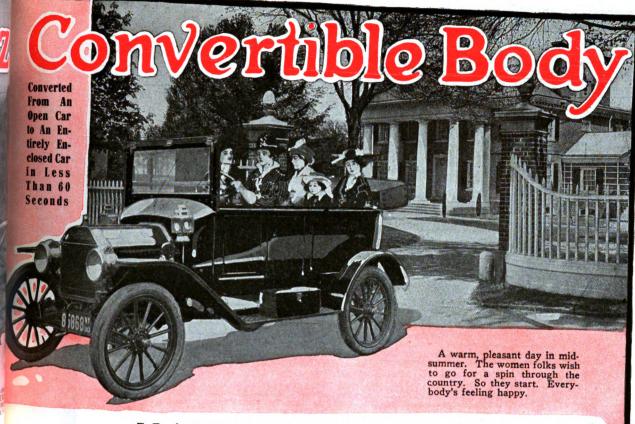
The LEWKOWICZ CONVERTIBLE BODY will add tremendously to the convenience and comfort that you will get out of your car—and make it adaptable for use 365 days in the year—and at a very reasonable cost.

Get in touch with us today and we will give you complete information.

The Holbrook Company of New York The Holdfrook Company of New York City, the well known body builders, has been licensed by us to build the LEW-KOWICZ CONVERTIBLE BODY for high grade cars for Greater New York.

Convertible Automobile Body Corporation Longacre Building, 42d Street and Broadway, New York City

'Phone, Bryant 7835 Factory: 128th St. and Park Ave., New York City. 'Phone, Harlem 4390



## MANUFACTURERS!

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You manufacturers who are desirous of keeping in the vanguard of progress should consider the LEWKOWICZ CONVERTIBLE BODY as standard equipment. Here's the opportunity to prove to your owners that you are always alert for their comfort and convenience.

The LEWKOWICZ CONVERTIBLE BODY gives the owner the pleasure of an open touring car with the convenience, comfort and protection of a limousine. Some men may want a touring car; others may need a closed car. The man who cannot afford to buy two cars will readily buy a car equipped with the LEWKOWICZ CONVERTIBLE BODY. Not only will your sales force have a splendid selling argument, but many a hesitating buyer will be closed by the fact that with your car he can have a convertible body.

### Ford Agents and Dealers:

Every car you sell should be equipped with a LEWKOWICZ CONVERTIBLE BODY. Every prospective buyer of a car really wants this convenience. And of the thousands of cars already in use in your territory every owner will gladly buy a LEWKOWICZ CONVERTIBLE BODY when you demonstrate its easy working and comfort-producing qualities.

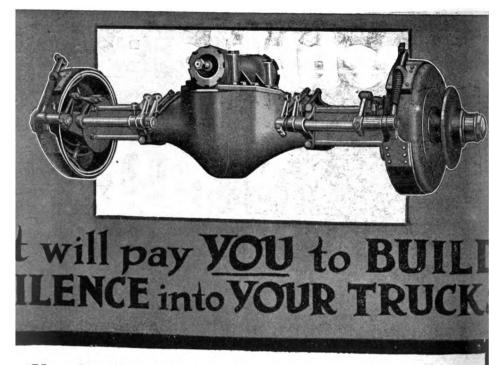
Double your income by handling the LEWKOWICZ CONVERTIBLE BODY.

Write us-today-for the agency in your territory.

## CONVERTIBLE AUTOMOBILE BODY CORPORATION

Longacre Building, Forty-second Street and Broadway, New York City
'Phone, Bryant 7835

Factory: 128th Street and Park Avenue, New York City.' Phone, Harlem 4390



You Can Do It Best, and Most Economically, with

## Sheldon Worm Gear Drive

The day is now in sight when the discriminating motor truck buyer will insist upon worm drive. He realizes that the elimination of noise means increased efficiency. He knows that the worm drive is not dependent upon delicate adjustments; and that its efficiency actually increases in service. Wear in any other form of drive causes extreme noise, does not have this effect upon the worm and worm wheel.

All the quality of design and workmanship that has made SHELDON SPRINGS and SHELDON AXLES famous is built into SHELDON WORM DRIVES. The worm is almost indestructible and will stand years of wear; the wheel is of phosphor bronze. SHELDON KNOWLEDGE and SHELDON EXPERIENCE make these the best obtainable.

In addition to the silence of the truck, think of the neatness, the simplicity, the efficiency—that are distinct advantages of the worm drive.

Remember that every noted European manufacturer of commercial vehicles is using worm drive. These European manufacturers have proved that the long life, quiet running and high efficiency of the worm drive are sufficient reasons for its

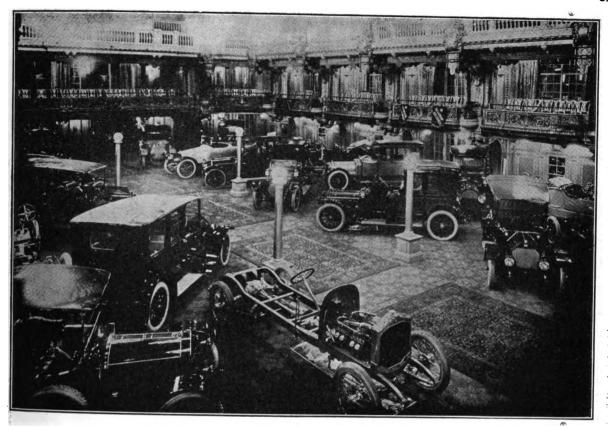
And if you desire still further evidence of the desirability of worm drive as an asset to greater efficiency and increased sales value of your trucks—write us.

## SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

Chicago Office 68 E. 12th St.

San Francisco Office 444 Market St.

Detroit Office 1215 Woodward Ave.



### It Was a RUSHMORE Show!

At the recent Importers' Salon, Hotel Astor, eight foreign and two American makes of cars were exhibited (cyclecars are here omitted).

Five of the foreign makes and one American make were equipped with the

### RUSHMORE STARTING AND LIGHTING SYSTEM

The other three foreign makes were not electrically equipped. Following is the count in detail:

Rushmore-equipped	No Electric Equipment
DeDion-Bouton         5 cars           Mercedes         6 cars           Isotta-Fraschini         6 cars           Lancia         8 cars           Delaunay-Belleville         4 cars           Simplex (American)         6 cars	Fiat       3 cars         Minerva       3 cars         Peugeot (large)       2 cars         Total no equipment       8 cars
Total Rushmore equipped 35 cars Total Rushmore-equipped foreign 29 cars	Non-Rushmore S. G. V. (American) 3 cars

An American starting and lighting system was seen among the accessory exhibits, but was not represented on the cars on the floor.

RUSHMORE DYNAMO WORKS Plainfield, N.J.

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## **NEW PRICES** THAT GET THE BUSINESS



Gasoline Chasses

Model		: Cnasses	
VC SC	Capacity 1 <sup>1</sup> / <sub>4</sub> tons 2 "	Old Price \$1900	New Price \$1500
H HU	31/2 "	2600 3250	1900 <b>225</b> 0
K KU	31/2 " 5 " 5 "	3500 4250	2500 2750
0	Electric	4500	3000
1 2 2	1000 lbs. 2000 "	\$1400 1500	\$1200 1300
3 4 6	4000 " 5000 "	1700 2000	1450 1650
8 10	6000 " 8000 " 10000 "	2300 2650	1900 2100

Terms net cash F.O.B. Pontiac These prices are made possible by our new policy, which became effective

We made the first successful truck.

12

We are the first to offer trucks to buyers on a RIGHT business basis.

We offer a red-hot, money-making proposition to any man with trans-

We make a truck to fit YOUR business.

10000

12000

### GENERAL MOTORS TRUCK COMPANY PONTIAC, MICHIGAN

One of the units of the General Motors Company, the largest builders of automobiles in the world. Branches:

Boston St. Louis

Philadelphia Kansas City

2950

3200

Detroit

Chicago

## NEW POLICY THAT IS SOUND AND FAIR



General Motors Truck Company's new policy referred to on the opposite page means an elimination of the trade practices that were responsible for high motor truck prices.

In the future we will sell motor trucks for cash.

We will fully guarantee them as to material and workmanship.

We will not give "free" maintenance service beyond the point of making our guarantee good. But we will give competent instructions and cooperation at time of purchase or any time thereafter.

We will maintain branches with complete stocks of parts in principal cities.

We will not accept old trucks as part payment for new ones. This policy puts the truck business on a sound business basis. It eliminates losses and a big overhead expense—which has heretofore added to the price of trucks. It enables us to base our prices on a fixed factory cost with a reasonable profit added. It means a square deal for everybody—it means you get what you pay for. Isn't that the way you like to do business?

Correspondence invited.

## GENERAL MOTORS TRUCK COMPANY PONTIAC, MICHIGAN

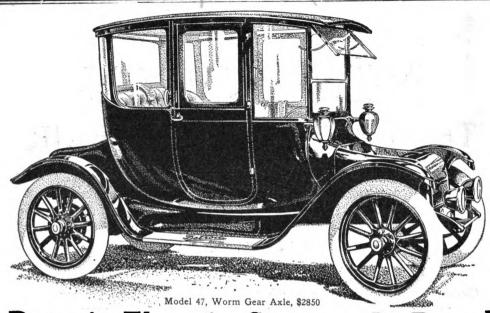
One of the units of the General Motors Company, the largest builders of automobiles in the world.

Branches:

New York

Boston St. Louis Philadelphia Kansas City Detroit

Chicago



## Detroit Electric Success Is Based on a One-Price Policy

The Detroit Electric policy of one price—and that a fair price—has been a large factor in creating the prestige, the vogue and the leadership which the Detroit Electric today enjoys.

The Detroit Electric price is not only one price to all, but absolutely the lowest price at which a car of Detroit Electric quality can be sold. Large production makes possible the lower price.

Price doesn't really mean anything except in relation to value. A few hundred dollars added to the price (and then taken off by a

cut in price or an excessive allowance for a used car) doesn't change the quality of the car. You dealers don't gain anything in selling an over-priced car.

Detroit Electric cars are sold at catalog prices. They are known as one-price cars. You never have

to apologize for, or defend, Detroit Electric prices; for Detroit Electric cars offer the biggest electric car values on the market. They combine the most modern features of electric car construction with

the utmost elegance in design and appointments. And their prices are from \$300 to \$500 lower than corresponding models of cars not

nearly equaling the Detroit Electric in quality.

Detroit Electric cars are easy to sell—and they stay sold. Detroit Electric owners are satisfied owners. Write for our beautiful part

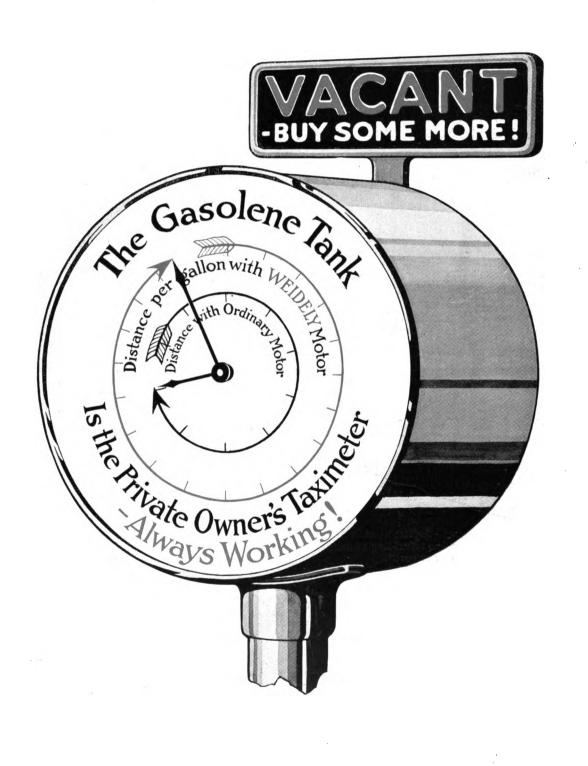
Electric owners are satisfied owners. Write for our beautiful new catalog. Ask for information about our opportunity to dealers.

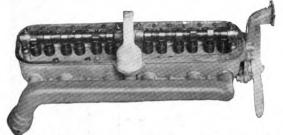
Anderson Electric Car Company

ELECTRIC

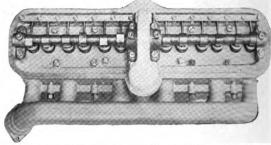
**Builders of The Detroit Electric** 

Largest Manufacturers of Electric Pleasure Vehicles

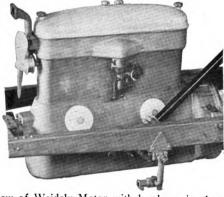




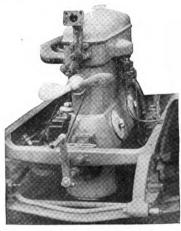
Head of Weidely Motor with cap removed. Note simplicity of valve mechanism. No rocker arms, plungers or heavy rollers.



One cam-shaft placed directly over the valves, in turn operated by a single vertical shaft employing large gears, simplifies and silences.



View of Weidely Motor with head cap in place. No outside moving parts—nothing to gather dirt.



Front view of Weidely motor. Note unification of design. Radiator mounts directly on motor—no rubber water connections.

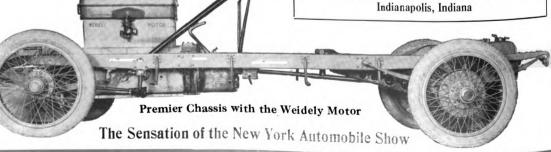


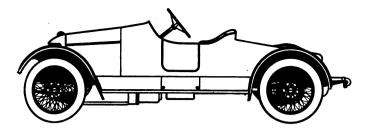
View of head removed—the last word in accessibility. No complication—no unbuilding of motor to permit of examination of any part.

### Mr. Dealer:

Examination and study of these pages devoted to the Premier car with the Weidely Motor will convince you that here is the line that has more real features, more convincing points, more public interest than anything which has been shown at the automobile shows in many seasons.

Premier Motor Manufacturing Company Indianapolis, Indiana



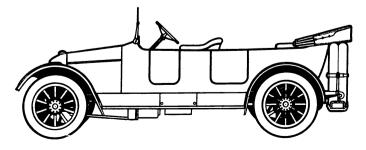


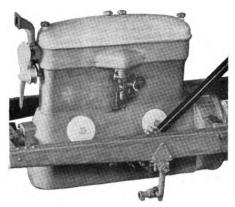
### **PREMIER**

- The Dealer who has not seen the Weidely Motor owes to himself its inspection before he decides which car he will sell during the 1914 season.
- For the Question of SELLING cars now revolves about the point of economical maintenance. Most standard cars are well made and reliable. But the operating costs of many still are excessive. "What will this car cost to operate?" is the question buyers are asking themselves today.
- The Weidely Motor has fewer parts than any other six-cylinder motor—no complication—less weight—greater power—and travels more miles on a gallon of gasoline than any four-cylinder motor of equal size.
- The difference is this: All the valves are located directly in the cylinder heads and are operated by a single cam-shaft placed directly over the valves. This shaft in turn is operated through a vertical shaft driven by large gears.
- Thus all rocker arms, all plungers and rollers are unnecessary and therefore are eliminated. This means permanent quiet in an overhead valve motor. And it permits of perfect lubrication of all the valve mechanism. It permits 25% added efficiency—25% more power and speed.
- But the best of it is, from the owner's standpoint, in that it saves 40% of the operating cost, the saving that buyers want today. And it gives dealers a leverage in selling the Premier Car that no agent of any other car can offset.
- The Premier reputation behind this car, and this motor with its advantages in size and economy, form the greatest assets any dealer can have in the selling of motor cars in 1914.
- The Premier with the Weidely was the New York
  Show feature. All of New York came to examine it. All were astounded at its unique simplicity.
- The question now is, do you wish to handle in 1914 a car with the above features, or would you have such a car on the floor of your competitor? Note the lines of these cars—the snappy style—the advancement. Here's a car that no man can choose against his wife's wishes, for here is the beauty and style that she wants. Don't make any contracts for 1914 until you've had the Premier proposition in detail. Send for details.

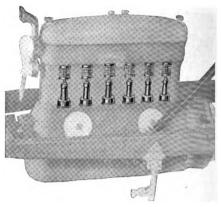
The Weidely Motor cannot be had in any other American car.

Premier Motor Manufacturing Co. Indianapolis, Indiana





Note the simplicity of the Weidely motor. All the valve mechanism localized on the head of the motor, directly over the cylinders. All perfectly lubricated. Short direct action. No cumbersome parts—no power wasted.



Valve mechanism of the ordinary motor—just the same on the other side, to say nothing of the multiplicity of gears vitally essential to the operation of the other motor. All eliminated by Weidely. Think of the wasted power.

### Reprint-Motor World-Jan. 8, 1914

New York Show Comment

Premier-Weidely Motor "Sensation."

There remains only one other block-cast 'six'' among the new cars that are making their debut, and that one is unlike anything else either at this show or at any other show. It is, in short, the sensational Premier-Weidely motor, which reveals the altogether unusual combination of block-cast cylinders, overhead valves and a detachable cylinder head. As was made plain in the Before Shows Issue of Motor World, these three features are its most distinctive marks, as if any two alone would not be sufficient. In the flesh, or, rather, in the metal, the Weidely motor is even more impressive than it is on paper, for no amount of description can serve to convey to the average mind the really marvellous simplicity of the motor; with the neat aluminum housing over the single camshaft and its wormactuating gear at the top, there is not a single moving part in view, with the exception of the magneto shaft, of course. The valves are all covered, as a matter of course, and the clutch and gearset are contained in

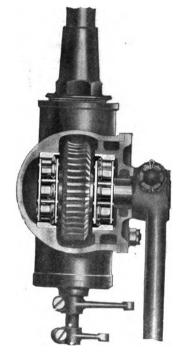
a solid housing which bolts closely to the crankcase of the engine. Even manifolds have been done away with-in fact. it is difficult to conceive of a more completely enclosed and compact power plant. The dimensions of the motor are 31/8 x 51/4 inches, though the mere figures scarcely are any indication of the power it is capable of generating As for the rest of the chassis in which the engine is exhibited, it differs scarcely at all from the standard Premier chassis, in which there has been found very little room for improvement. There are other Premier cars on exhibition, of course, a touring car and a fast-looking, roadster, but neither has the power to distract the attention of those who see the Weidely motor first

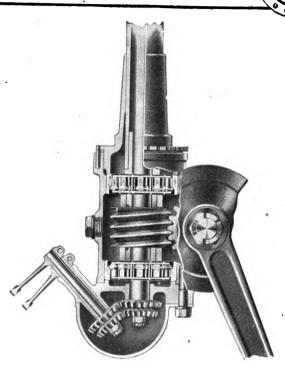
We make no claims to the supernatural. We cannot get more power out of a gallon of gasolene than it contains. Our economy is effected by efficiency. The difference between what we get and what the other fellow gets is what he wastes.

## PREMIER



## BOWER SAVES POWER"





## Safe Steering!

The steering gear is but a small part of an automobile, but upon it depends the driver's comfort, and many times the safety of all the occupants. Bower Roller Bearings make the steering gear reliably responsive to the guiding hand of the driver, no matter what the road conditions may be. These bearings cannot tighten or lock, and they never need adjustment.

The steering gear shown above is that of the most famous high-priced motor car on the market.

Notice: The Bower Roller Bearing is patented in the United States and foreign countries. INFRINGERS of our patent right to MAKE, USE, VEND or SELL will be duly prosecuted.

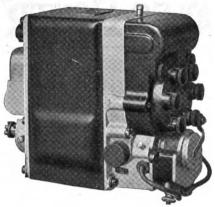
### **BOWER ROLLER BEARING COMPANY**

Detroit, Michigan

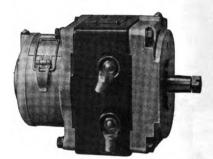




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Starting Motor

# These Illustrations are representative of Westinghouse Automobile Equipment which is used on the cars of these Automobile Manufacturers:

Austin Automobile Co.
A. C. Barley "Halladay"
The Bartholomew Co. "Glide"
Brewster & Co. "Delaunay-Belleville"

J. I. Case T. M. Co.
Chadwick Engineering Works
Chandler Motor Car Co.
Geo. W. Davis Motor Car Co.
Dorris Motor Car Co.
F.I.A.T.
Herreshoff Motor Co.

Hupp Motor Car Co.
W. H. McIntyre Co.
Marion Motor Car Co.
Moreland Motor Truck Co.
The Norwalk Motor Car Co.
Oakland Motor Car Co.
Palmer & Singer Mfg. Co.
The Pierce-Arrow Motor Car Co.
Pullman Motor Car Co.
Stevens-Duryea Co.
Wichita Falls Motor Co.

## Starting—Lighting—Ignition Systems

To Dealers and Repair Shops

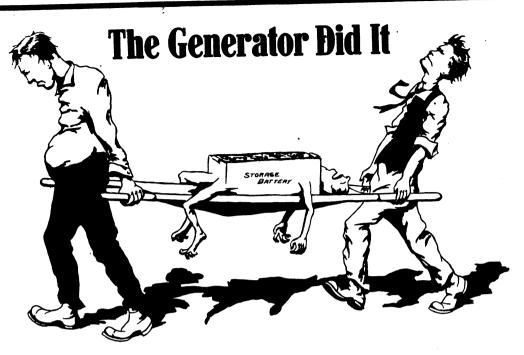
Send us your name and we will mail you a complete set of instruction books on Westinghouse Electric Starting, Lighting and Ignition Systems, and place your name on our mailing list to receive new instruction books as issued. Westinghouse Electric & Manufacturing Co.

Automobile Equipment Division EAST PITTSBURGH, PA.

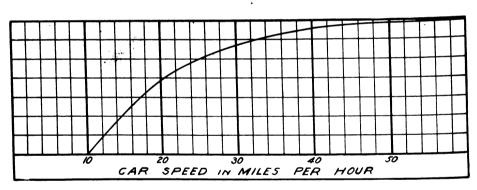
Member Society for Electrical Development "Do It Electrically"







Dead Storage Batteries are caused by electric generators having an output curve like this-



The output curve of the Leece-Neville Electric Generator is unlike the the one illustrated above as it rises quickly and always keeps the battery alive at any speed.

Investigate the Leece-Neville Electric Starting and Lighting System in use on a Haynes car and you will find that the batteries do not have to be taken off of the car to be recharged.

Manufactured by

THE LEECE-NEVILLE COMPANY, 1051 Power Avenue, Cleveland, Ohio



2 Tons

5 Tons

We announce the addition of two models of Kelly trucks—capacities 2 and 5 tons.

These new models round out what many experts pronounce the best line of motor trucks on the market today.

Our improved 1 and 3½ ton models, which were announced a little more than a year ago, were instantaneous successes. The new models will be even greater successes.

We have always had the quality. Now we have a complete range of models. With 1, 2, 3½ and 5 ton models we have a suitable capacity for every reasonable business requirement.

The entire Kelly line is designed as a harmonious whole. It is the result of eight years of uninterrupted observation of the evolution of the successful commercial car.

May we send you catalog and full specifications of new models?

The Kelly-Springfield Motor Truck Co.

900 Burt Street Springfield, Ohio



HE ability to go when and where you please whether to the corner grocery or across the mountains into another State, with perfect comfort and with the confidence that your motor will never fail you, this is what you are entitled to when you buy an automobile. And this is what you get if you select a car that carries

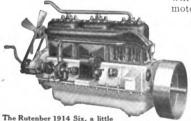
# RUTENBER 1914 MOIOR Six

No roads are impassable to the Rutenber. No hills are too steep for it to negotiate. The masterful manner in which it is designed and built insure freedom from misadjustments and breakdown. Though you travel from coast to coast, as many owners of Rutenber-driven cars have done before you, there will not be one moment in which you need fear for your

There are so many excellent motor cars equipped with the Rutenber Motor that you should have little difficulty in selecting one perfectly suited to your most fastidious requirements. We will gladly send you our Book and a list of some of these cars. Write for it today.



MARION, INDIANA



The Rutenber 1914 Six, a little more costly than other six cylinder motors, is the new standard toward which all others are striving. Mur I t.

Every man with "sense enough to come in out of the rain" will now have Collins Always-Ready Curtains on his car. Snap!—Snap!—quick as a flash!—and they're in place—from the inside—without leaving your seat. No fumbling under the rear seat for one curtain after the other. No getting the wrong curtain half on—then having to change. No standing in the rain and mud outside—then tracking the mud back into the car. Here is the biggest improvement that has come to motoring in years!

# Collins Always Ready Curtains



Collins Curtains are always ready, strapped to the bows under the top. All that is necessary is to unbuckle them, slide them down the curved bracket bar, swing into place and clinch them. The right Curtain for the right place is always at your fingers' ends.

And when the sun comes out again, it is far simpler to swing them back and strap them into place than the old method—and it is compulsory, for they are attached to the bracket bar, so they can never be out of place.

Another thing—Collins Curtains are always in good condition—for when not in use they are neatly rolled—not

tolded. With the oid style curtains you never know what condition they will be in when you pull them out from under the seat—sharp kinks, broken and buckled celluloid lights.

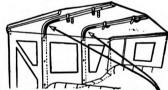
Be sure to have Collins Always-Ready Curtains on the car you buy. The manufacturer or the dealer from whom you purchase will probably be glad to see that you get them. For he wants to sell you as up-to-date a car as he can.

These up-to-the-minute manufacturers have recognized the advantage of Collins Always-Ready Curtains:

They are now regular equipment on the Cadillac, Chalmers, Haynes, Cole, Pullman, Havers, Herreshoff, Jeffery, National, Lyons-Atlas, Apperson, Winton, Stearns-Knight, Moon, Velie, Davis, Speedwell, Jackson, Pratt, Palmer, Stanley and McFarlan.

To Ford owners: We can now furnish Collins Always-Ready Curtains for Ford cars.

We license top manufacturers to furnish Collins Always Ready equipment with new tops or to equip old tops.



You can have Collins Always-Ready Curtains on your new car. You can have Collins Always-Ready Curtains on the car you are now driving.

Any top builder can apply them at a moderate charge, and the Collins attachment is applicable to any top and to your old style curtains.

There are some imitations and evasions of the Collins patents, which in some respects resemble Collins Curtains, but they do not have Collins advantages. Look for the exclusive Collins <u>curved bracket bar</u> and the Collins license tag.

Be sure to see Collins Always-Ready Curtains at the Chicago, Boston and Philadelphia Automobile Shows—or better still, write us today and we will tell you where you can see them now.

Novelty Leather Works Dept. D. Jackson, Michigan

# The Star of the Show

AT NEW YORK the center of attraction was the Maxwell "25"—the imcomparable \$750 car.

AT CHICAGO it will be the same thing—for there's nothing on wheels that can compare in value with this car.

DEALERS CONTENDED WITH THE CROWD of sight-seers for a look at the stripped chassis that was first shown at New York.

AND THEY FOUGHT FOR TERRITORY—two and three dealers from the same town in many cases all wanted the Maxwell line for 1914.

IT'S THE WINNING LINE—that's conceded. It's the one best bet from the dealer's standpoint because, while he gets a complete line, we do not insist on his taking a number of the bigger models in order to secure the agency for the "best" seller.

THERE ISN'T A BETTER SIX anywhere than the Maxwell "50-6" and surely never was such value as this magnificent seven passenger car at \$1,975.

IF THAT WASN'T THE FACT, then we'd have to do as other makers do — we'd have to insist on the dealer taking a six for every three or four of the "25" model.

BUT WE DON'T. DON'T NEED TO. The six sells on its own merits—and orders are always ahead of the factory output.

IT'S THE SAME WITH THE "35" MODEL—the electrically lighted and started Maxwell that sells for \$1,225.

THIS CAR COMPETES IN A CLASS by itself—with other makes selling under \$1,500. And in its class it has no peer.

POWER AND QUALITY OF FIN-ISH—you can't equal this Maxwell anywhere at its price.

SO WE SAY TO THE DEALER—You may order "35's" or "50's" as you need them—and if we're not too heavily oversold, we'll be glad to furnish them. But you don't have to specify a certain number of any model in order to secure the one you want most.

for any nanufacturer to occupy—
three models, each of which is acknowledged leader in its own price and power class—but none of which competes with the other.

THAT'S THE MAXWELL POSI-TION and that's why we now have T. [ Size

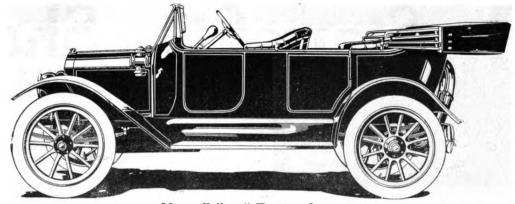
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Maxwell"25-4" Touring Car-\$750

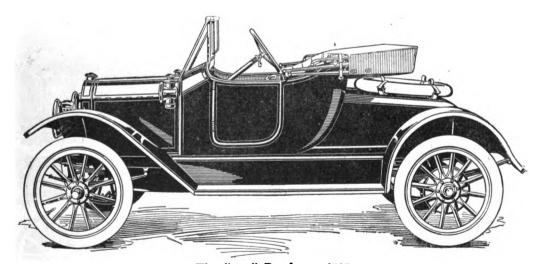
our choice of dealers everywhere—we have what they want and no strings to it.

COME EARLY AND SEE THE MAXWELL exhibit before all the crowds get there.

STUDY CLOSELY, CRITICALLY, that wonderful piece of engineering the Maxwell "25" chassis. It's the

lowest priced model we make and you'll say: "If this is so good, then surely the higher priced models must be splendid." And that's true too,

WE'LL SHOW ALL BODY STYLES on the "25" chassis at Chicago—the 5-passenger touring car—\$750; 2-passenger convertible roadster and utility car—\$725; the town car—\$950; and the light delivery wagon.

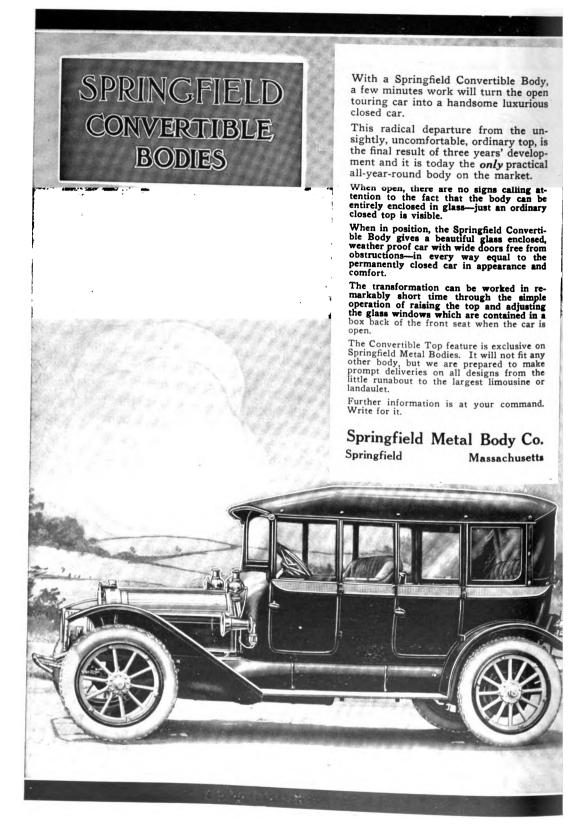


The "25-4" Roadster-\$725

# Maxwell Motor Company, Inc.

Detroit, Mich.

Dealers and Service Everywhere



Body, e open urious

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Talk with the man who rides on TIMKENS

You can't know too much about the motor-car—the one you own or the one you expect to buy. Timken advertisements have told you about the foundations of the car—the axles and bearings. They have told you how two great Timken organizations are devoting themselves solely to the tasks and ideals of building the axles and bearings that will give the best possible service in motor-cars, pleasure and commercial.

And you know that it is not what the maker says about his products but what users say about the performance of those products that makes or breaks their reputation.

Sincere advertising pays. We believe in it and in the big definite objects of Timken advertising. Have you wondered what those objects are?

Timken Axles and Bearings are not in any sense "accessories." They are important *integral parts* of the car and can be sold only to car manufacturers. There exist in the United States not more than 150 car makers who can be possible Timken customers.

ONE great object of Timken advertising is to emphasize the obvious fact that cars which are to give lasting satisfactory service must be built of the right parts. Right foundations—axles and bearings; right motor, steering mechanism, springs—right every part.

And these right parts must be rightly "engineered" into the car by the combined efforts of the engineers who design the car and the engineers who design the integral parts.

Emphasizing these facts helps the whole motor-car industry.

We believe the public will reward all of us makers of axles, of bearings, of other parts and of complete cars who are sincerely striving to put the utmost use-service-value into our products.

ANOTHER object is to so widen the existing good reputation of Timken Axles and Bearings that they will have, in addition to their service value to the car owner, a distinct selling value to the car manufacturer. Knowing, as you and we do, that a lasting selling value can exist only where the truth is told and can be proved. Widening the good reputation of Timken Bearings and Axles

will, we believe, render a real service to car buyers—because Timken Axles and Bearings are standing up to the test of every-day use; a real service to dealers and manufacturers—because selling real values is their problem; and a real service to ourselves—because our future business success depends on the success of users, dealers and makers of Timken-equipped motor-cars.

THUS you have the main objects beneath all Timken advertising. And to accomplish those underlying objects each individual advertisement aims to induce you to talk with the man—there are thousands of him, everywhere—the man who rides on Timkens.

Those of you who ride on Timken Bearings and Axles know what service they render. Tell it, we urge you, tell it to others—for their benefit.

And you who are going to buy cars, ask about the day-after-day and year-after-year service Timken Axles and Bearings are giving. Ask, for your own benefit.

WHILE earnestly trying to build the axles and the bearings that will give the best account of themselves in use we recognize you, the car owners, as the court of final appeal. Our whole future success depends upon your verdict. If now or in the future you find that other axles or other bearings are giving better service than Timkens we not only expect, but advise, you to give them your support.

It is only because of our supreme faith in our ideals and our products, axles and bearings, that we dare ask you—for your own information and benefit, to talk with the man who rides on Timkens.

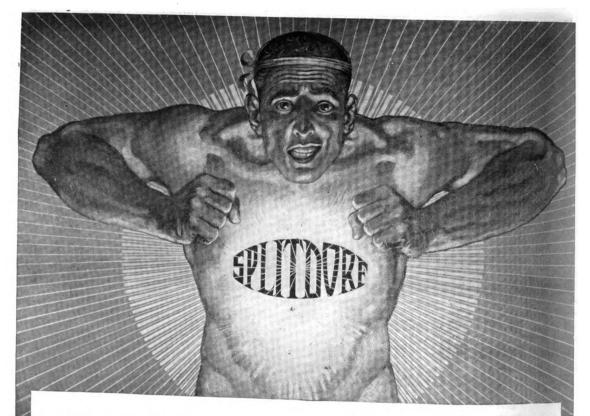
The reasons back of our confidence in your verdict are given in the Timken Primers, T-1 "On the Care and Character of Bearings" and T-2 "On the Anatomy of Automobile Axles." Sent free, postpaid, on request to either company.



THE TIMKEN ROLLER BEARING COMPANY Canton, Ohio
THE TIMKEN-DETROIT AXLE COMPANY Detroit, Michigan



# TIMENTED BEARINGS & AXLES



SPLITDORF PLUGS are an *investment---never an expense*. Their design and manufacture are warranted to overcome all fouling causes—we have records of their remaining in cylinder heads and giving perfect service and incredible time.

The other day an owner brought his 1910 automobile to our Chicago branch and complained of spark trouble. Upon examination the plugs, almost "frozen" in the cylinder heads, were found a trifle the worse for wear at the sparking point, but as clean as a whistle.

"When have you changed the plugs?" was asked.

"They came with the car—I've never changed them," came the answer.

"Don't you think you might invest in a new set after 3 years usage?"

He thought so and INVESTED

YOU SHOULD DO THE SAME.

# SPLITDORF ELECTRICAL COMPANY

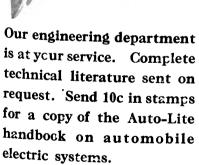
ATLANTA,10-12 E. Harris St. BOSTON, 180-182 Mass. Ave. CHICAGO, 64-72 E. 14th St. DETROIT, 972 Woodward Ave.

KANSAS CITY, 1823 Grand Ave. LOS ANGELES, 1226 S. Olive St. NEWARK, 290 Halsey St. NEW YORK, 18-20 W. 63d St.

PHILADELPHIA, 210-12 N. 13th St. SAN FRANCISCO, 1028 Geary St. SEATTLE, WASH., 1628 Broadway LONDON BUENOS AIRES

Factory; NEWARK, NEW JERSEY





Pranches:



As Sure as the Whirl of the World.

# In Winter

the real worth of electric starting and lighting systems is shown. The cold weather, snow, and slush tend to complicate conditions and make successful operation difficult.

The electrical systems manufactured by the Electric Auto-Lite Company of Toledo for use on motor cars, have been developed by patient and careful study of the unusual conditions under which such apparatus must work.

As a result, they will be found to be admirably adapted for the work for which they were designed.

Capable, compact and substantial, they are fully protected from deteriorating influences such as water, grease and dirt.

#### THE AUTO-LITE LIGHTING GENERATOR |

is made in two types, one for lighting alone, the other combining lighting and ignition. Runs at engine speed, may be directly connected to pump or magneto shafts; no chains, sprockets or gears required.

Reaches its maximum output of about twelve amperes at car speed of about eighteen miles per hour.

Begins to produce current at six miles per hour. Operates at 6 volts, weight 371/2 lbs.



Model G Generator Type S.R. 4

The combination outfit is fitted with a standard distributor and timer, and by its use the magneto is discarded and generator placed on its bracket.

This generator produces sufficient current to keep 120 ampere hour battery, always charged for starting, lighting and ignition.

# THE AUTO-LITE STARTING MOTOR

is 8 inches in length, 5½ inches in width; will crank the largest six cylinder engines at a speed of over 100 revolutions per minute on less than 100 amperes of current.

Can be attached to any automobile engine in cither a horizontal or vertical position,

# The Electric Auto-Lite Company "The Pioneer Makers of the 6-volt Electric System."

Starting Motor

TOLEDO, OHIO, U. S. A

NEW YORK

DETROIT

KANSAS CITY

SAN FRANCISCO

Look for the Auto-Lite Exhibit at the Shows

(116)



WE sometimes lose orders; our reason for losing them is generally the reason for our getting others.

We cannot compete on price, because we will not cheapen our product; consequently we lose orders from a certain class of motor car manufacturers.

It is for this same reason that other manufacturers prefer to place all their business with us.

When cars are built to sell at a price, the manufacturer is generally willing to risk another carburetor; the Rayfield has no place on such a car.

If a man will skimp the very foundation of his product, it's safe to assume that he is willing to take chances on other things.

The Rayfield Carburetor alone cannot make a poor car good; but the absence of the Rayfield on an otherwise excellent car will surely reduce that car in quality.

When an automobile engineer selects a carburetor to meet a price-requirement it invariably means trouble.

If he isn't looking for the best, he isn't looking for Rayfield; and if he buys on the "just-as-good-as" basis we probably couldn't help him anyway; we'd rather some one else sold him carburetors.

One manufacturer sells a car for \$1250 and buys the most expensive carburetor we can build.

Another builds a \$5000 car and also uses the best Rayfield we make.

The carburetors are not alike; they don't cost the same; and yet each is the best carburetor that can be built for that car at any price.

The Rayfield policy may seem a bit severe; exacting, perhaps, to certain manufacturers; but our very successful experience has convinced us that the standpoint we have taken does not call for explanations later.

We meet quality with quality; and when you see a Rayfield Carburetor on a car you can be pretty sure that sincere service is the basis upon which that car is built.

If you are going to be at the Chicago Show make the Chicago Branch, 1140 Michigan Ave., of the Rayfield Company your headquarters and have your mail addressed care of us.

Look for the Rayfield Service Station in your city.

Findeisen and Kropf Manufacturing Co. 2101 Rockwell Street, Chicago, Illinois

BRANCHES: 1140 Michigan Ave., Chicago, 1211 Woodward Ave., Detroit, 1902 Broadway, N. Y.

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# Mr. DEALER---You Ought To Know

Before closing your 1914 Contract that WE are entering our Eleventh year of Continuous Manufacturing of Motor Trucks.

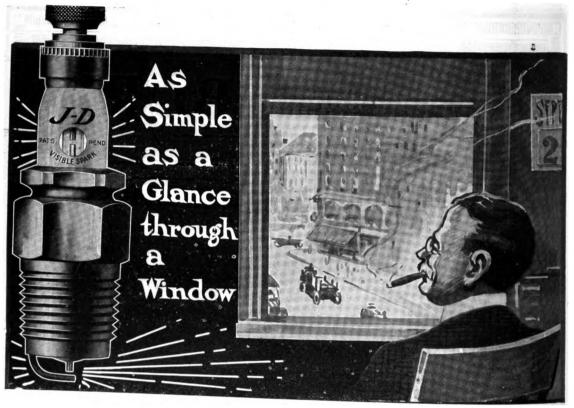
WE have more orders on our books for trucks now, than in any December in the history of our business.

## There Are Reasons For It---Think It Over

Write Us Today for Particulars of Our Complete Line of WORM DRIVE TRUCKS

### ATTERBURY MOTOR CAR COMPANY

Black Rock, Dept. "M.W.," Buffalo, N. Y.





### VISIBLE GAP SPARK PLUG TELLS ITS OWN STORY

Through the window in the porcelain of the plug-outside the motor-you can instantly tell if the plug is firing correctly. You can see the spark jump the gap in the central electrode at any time—

#### It Simplifies the Trouble Hunt by Half

If there is a spark in the window, but proper ignition fails, you know the points are fouled. In that case, just turn the knurled micrometer nut at the top of the plug with the fingers and separate the visible points still more. This increases the intensity of the spark, breaks down all oil or carbon deposits between the points and automatically cleans them in a jiffy.

And if there is no spark in the window, you know you must look to coil, batteries or magneto for your trouble.

#### You Don't Have to Take the J. D. Plug Out of the Motor

By this micrometer nut you can adjust each plug so as to give maximum sparking efficiency.

#### One Glance Through the Window Tells All

You need a set of these plugs in your motor. Send for a set now, enclosing price and size wanted (or tell make of car), and we will forward them at once, prepaid. Our rigid guarantee of positive satisfaction or your money back goes with every plug.

#### You Are the Judge in This Trial

We make millions of spark plugs a year-that's our only business. We import the clays for our heat-defying porcelain, and use the best material on the market.

#### Yet the Price of the J. D. Visible Gap Spark Plug Is Only \$1.00

Perhaps you would like our free book on Ignition. It contains a mine of useful information. A card brings it.

# JEFFERY-DEWITT CO.

565 Butler Avenue

Largest Manufacturers of Spark Plugs in the World DETROIT, MICHIGAN



# Spend a quarter for this book—save many dollars in repair bills

It is the motorcyclist's best friend because it is always on the job to help in time of trouble and you need not be a mechanical engineer to understand it.

It is brim full of practical advice and suggestions relating to every type of motorcycle.

CARE AND REPAIR TORCYCLES

The present edition includes free engine clutches, two-speed gears, mechanical lubricators and magnetos, together with special matter on motors, valves, carbureters, fuel and important general subjects, all plentifully illustrated

Dealers and jobbers in all parts of the country are selling "Care and Repair of Motorcycles" to both new riders and veterans as the best aid in correcting and avoiding motorcycle troubles.

Ask your dealer about it, or send a quarter to us for a copy to be sent you postage prepaid.

Special rates to Jobbers and Dealers in quantity orders.

Bicycling World Co.

# Let's Sing a Song o' Silence! It's the only Song I know, says



"The Part That Sells the Car"

A silent machine is a well-made machine. Even small, light machinery driven by external power, say sewing machines, will be noisy from the start, if not made with accuracy, or will soon become noisy if not made of the best of good stuff.

What a triumph is it, then, to make a machine like the BUDA MOTOR! It produces, from violent internal explosions, its own power to the amount of many horse power. It can, nevertheless, turn hundreds of times in a minute almost without a sound, and it preserves its silence for years, through untold millions of revolutions!



Madel "55.3" R "Little Six"

1108 S. MICHIGAN AVENUE, CHICAGO

We wish every manufacturer and every owner of a car would ride up a hill on a heavy load behind a BUDA four-year-old and listen sharply (he'd have to) for the BUDA "Song O" Silence isn't everything, but in an old motor it means that everything else is there.

#### **BUDA COMPANY**

FACTORY. HARVEY, ILL.. (Chicago Suburb)
Address all correspondence to our FACTORY REPRESENTATIVES BRANDENBURG & COMPANY

FORD BUILDING, PETROIT



'n

57th & Broadway, New York City

endinger attitudendingender ender One or two good concerns, rather particular about the CLUTCH because they know it is the daily, hourly, continuous

point of contact between driver and carwill find it mighty profitable to get in immediate touch with KONIGS-LOW-CLEVE-LAND

# Clutch Specialists—At Your Service

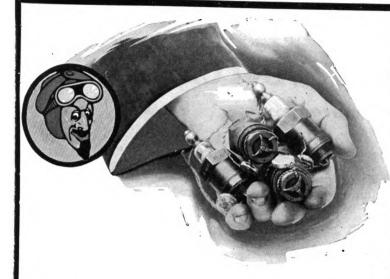
Our business is CLUTCHES and the assembly which is considered with them. Long experience with this line has won for us the title "Clutch Specialists." We invite you to make use of this experience.

Don't wait till you are ready to place orders-get in touch with us now. Delays are dangerous. Quick action wins.

THE OTTO KONIGSLOW MFG. COMPANY Cleveland

Clutches Clutch Rocker Shafts Control Levers Universal Joints

Detroit Office: J. H. Gould, 1202 Majestic Bldg. 



# These are the Plugs

HERE are the four original Bosch Plugs used in that famous Moline-Knight Test. Official investigation proved them practically perfect after their two weeks, day and night siege.

More than 11,088,000 High Tension Bosch Sparks passed over the electrodes of each plug without a miss and not an adjustment was made during the entire 336 hour run—that IS plugservice

Few motorists would subject a plug to a test like this in three years of hard driving, but those who did, would find Bosch Plugs equal to the trial.

Be Satisfied, When You Buy Plugs Buy Bosch Plugs

"Locating the Spark Plug," tells you all you ought to know about plugs—Write for a copy, its free.

BOSCH MAGNETO CO., 224 West 46th St., New York

DETROIT

Over 99 Service Stations in U. S. and Canada

SAN FRANCISCO TORONTO



# "WHITNEY" KEYS

for

"The Woodruff System of Keying"

"Whitney" Keys are packed in boxes containing 100 assorted sizes, selected especially for the benefit of the repair trade.

Every garage and repair man should have a box of these assorted keys on hand. They cost little and are very convenient. They may be purchased from the leading jobbers of automobile supplies or we can supply same promptly from the factory.

#### THE WHITNEY MFG. CO.

Manufacturers of

High Grade Driving Chains. Keys and Cutters for the Woodruff System of Keying Hand-Feed Milling Machines

American made for American trade

### **NEW DEPARTURE**

Guaranteed

### BALL BEARINGS

To facilitate supplying demand for garages, dealers and owners, for New Departure ball bearings, the following distribution agencies are announced, where stock of these bearings is carried.

Ahlberg Bearing Co93 Massachusetts Ave., Boston, Mass.
Pruyn & Bilodeau1550 River St., Hyde Park, Boston, Mass.
Ahlberg Bearing Co
Jos. C. Gorey & Co
The Gwilliam Co Broadway and 58th St., New York City
Pruyn & Bilodeau 1876 Broadway, Cor. W. 62nd St., New York City
Albany Hdwe. & Iron Co
Syracuse Rubber Co
Iroquois Rubber Co279-283 Washington St., Buffalo, N. Y.
Rochester Rubber Co24 Exchange St., Rochester, N. Y.
The Gwilliam Co1314 Arch St., Philadelphia, Pa.
Bumiller-Remelin Co
Cray Bros1111 West 11th St., Cleveland, Ohio
Hearsey-Willis CoIndianapolia, Ind.
Machinista Supply CoPittabergh, Pa.
Ahlberg Bearing Co
Chicago Pulley & Shafting Co32-36 S. Clinton St., Chicago, Ill.
Herring Motor Supply Co912-14 Locust St., Des Moines, Iowa

Faeth Iron Co
Pence Automobile Co
Fred Camphell
Rives-Austell Co
Elyea-Austell Co. Atlanta, Ga. The Lininger Implement Co Sixth and Pacific Sts., Omaha, Nob.
Denver Auto Goods Co
Fry & McGill16th and Broadway, Denver, Colo.
M. L. Poss
Bertram Motor Supply Co251 South State St., Salt Lake City, Utah
J. W. Leavitt & Co301 Golden Gate Ave., San Francisco, Cal.
Irvin Silverberg & Co541 Van Ness Ave., San Francisco, Cal.
Kimball-Upson Co609-11 K St.; 608-15 Oak Ave., Sacramento, Cal.
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Western Rubber & Supply Co1011 S. Olive St., Los Angeles, Cal.
Western Rubber & Supply Co., 66 South Fairoaks Ave., Passdens, Cal.
Western Rubber & Supply Co 1364 Fifth St., San Diego, Cal.
Ballou & Wright Seventh and Oak Sts., Portland, Ore.
Rallon & Weight St. Seattle, War-
Child, Day & Churchill Co1215 First Ave., Spokane, Wash.
Child, Day & Churchill Co1215 First Ave., Spokane, Wash. Automobile Supply Co

### The New Departure Mig. Co., Bristol, Conn.

Western Branch, 1016-17 Ford Bldg., Detroit

The logic of advertising to the dealer first, most and all the time, has been the foundation of nearly every successful advertising campaign conducted in the automobile business

The dealer is a wholesale buyer, either directly or indirectly, of ever meritorious product.

The dealer is more potent in moulding public opinion as to complete cars or accessories than any other individual in the industry.

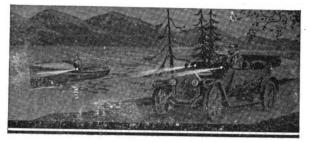
Motor World Is the Dealer's Favorite Trade Paper

### Motor World Publishing Company

1600 BROADWAY, NEW YORK

W. H. TRIPP, Western Adv. Mgr. 1001 Ford Bldg., Detroit

B. MATHEWSON, Adv. Mgr. 1600 Broadway, New York



#### An Electric Lighting System at **Moderate Cost**

Motorists are discarding old-fashioned oil lamps. They can now light their cars by electricity—economically. No need to install a dynamo or storage battery. Simply equip it with a set of

These lamps can be operated for one-third as much as standard equipment. They give a light of remarkable brilliance. Used for head lights, dash lights, tail lights and for illuminating speedometer and interior of car. Also for motor boats, camps, etc.

Made of vulcanized rubber fitted with a special Tungsten bulb mounted between a powerful lens and reflector. Easily and quickly installed. Operate on dry batteries. Price \$3.00 each.

Write Nearest Branch for Booklet and Prices to Dealers

#### W. JOHNS-MANVILLE

Albany Raltimore Boston

Cincinnati Cleveland Dallas Detroit Indianapolis

Kansas City Los Angeles Louisville Milwaukee Minneapolis

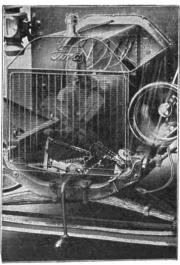
New Orleans New York Omaha Philadelphia Pittsburgh

San Francisco Seattle St. Louis Syracuse

2068

### FORD ENGINE STARTER—\$9.00

You do not have to leave your seat to start your **Ford Motor** with this Starter.



Becessary is to pull the lever. Will absolutely turn your moter past firing compression every

All that is

Can be easily attached by anyone in about one

install same. \$9.00 had at all dealers Absolutely no me- or direct on receipt of

price. chanical work necessary to DEALERS: WRITE FOR OUR SALES PROPOSITION TODAY.

Universal Manufacturing Co., Racine, Wis.



#### A Necessity With a Big Percentage of Profit

VOU can now offer your customer a device, at nominal cost, that is actually guaranteed to remove all water and dirt from gasoline or kerosene.

In addition to your 50% profit, the customer will be provided with a trouble-saver that is almost a necessity to every motor-car owner.



The No-Shammy Funnel Patented

The No-Shammy Funnel is intended to replace the ordinary funnel used in filling the motor-car or storage-tank. For best results it is essential that the water and dirt be removed from the gasoline. The No-Shammy Funnel is the only device, at nominal cost, that will effect a complete separation.

The ills resulting from water and dirt in the gasoline include carburetor-troubles, water freezing in the gas-line, engine-stops or failure to start. These points brought to the attention of the motor-car owner will effect a ready sale, as ALL carburetor troubles due to inefficient (impure) gasoline will be eliminated by using a No-Shammy Funnel.

Our advertising and merchandising plans for 1914 will assist materially to increase the demand for the product. Convincing direct appeal will predominate. You will be wise to write for our trade-proposition.

### The No-Shammy Products Co.

O. C. FOSTER, Sales Director

Hippodrome Building

Cleveland, Ohio



### Look to your

OU can take a thousand miles of service out of a set of tires by driving them insufficiently inflated over ten miles of road.

### The New Positive Lock Stop Twitchell Air Gauge

Insures you against premature wearing out of tires.

It is TIRE INSURANCE FOR ONE DOLLAR



For Sale by Jobbers, Dealers, Garages or

The Twitchell Gauge Company 1202 Michigan Avenue



# Billings & Spencer

We make stock forgings for the following parts:

> Rod and Yoke Ends Steering Knuckles Axle Ends Steering Connections

We also make special forgings to order for Axles, Crankshafts, Gears, Valves, Connecting Rods, Levers, Clevises, Brackets, etc.

Let us quote on your requirements. Send for our catalogue of Automobile Forgings and Tools.

The Billings & Spencer Co. HARTFORD, CONN.

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January 22, 1914

A SANFORD Lower costs, 1 regular service Buy a SANFO commence get

THE SANFOR W. Fayette S Room ttt 17 Date F. T. SANFORD A

SPECIALTIES ARE Skiing Gear Tran

Cone and Dis Control Les Auto Par

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day are shipt





In a situation like this there is no danger of collision when brakes are equipped with

# Non-Burn Brake Lining

Stops car almost instantly in emergencies. Never slips. Water, grease or gasoline can't affect its gripping power. Frictional heat can't burn it. Outlasts 12 ordinary linings. Made of Ashestos fibre interwoven with strong brass wire.

Write nearest branch for booklet and sample and Special Dealer Proposition

#### H. W. JOHNS-MANVILLE CO.

Manufacturers of Brake Lining; Spark Plugs; Vaporizers; Electric Lamps; Speedometers; Horns; Auto Locks; Fire Extinguishers; Carburetors; Dry Batteries; Fuses; Tapes; Packings, etc.

Akron Albany Atlanta Baltimore Baitmore Dalias
Birmingham Dayton
Boston Denver
Buffalo Detroit
Charlotte Duluth
Chicago Galveston

Cincinnati Cleveland Columbus Dallas

Houghton Newark, N. J. St. Paul New Orleans Indianapolis New York San Francisco Status Omaha Louisville Memphis Milwaukee Minneapolis St. Louis St. Louis Packers (1988). Toledo Washington Wilkes-Barre Youngstown 2055

#### THE B. & W. CRANK LOCK



Investigate the B. & W. before your customer's car is stolen. Every motor car owner needs constant and complete protection against the thief and joy rider.

The only Positive Crank Lock manufactured that absolutely locks the crank in engagement with crank shaft, making it an impossibility to start motor

by pushing car, towing or by jacking up the rear wheels.

It is a Positive Locking Device and can be attached by anyone in ten minute's time.

The B. & W. Lock is finished in black enamel and provided with a strong lock and two keys. To be attached to the front axle as shown in cut.

Price \$1.50

Order from your Jobber or write us

UNIVERSAL MANUFACTURING CO. RACINE, WIS.

STREET, STREET



#### Sell the battery that makes customers for you

Every time you sell a J-M Dry Battery to a new customer you make a REGU-LAR customer. J-M Dry Batteries hold trade because they are Guaranteed to give satisfaction—and because they DO give satisfaction—and because they DO give satisfaction!

Our extensive advertising campaign has created a widespread demand for



### J-M DRY BATTERIES

Battery users everywhere are learning that no other dry cell gives such all-around satisfactory service. Un-like ordinary batteries of high amperage, they are not subject to rapid deterioration—a fact that is recognized by motorists, owner of motor boats and others whose batteries are subjected to severe tests in actual service.

J-M Dry Batteries are made in three capacities—20, 30 and 35 amperes; 1½ volts per cell. Each battery is covered by the following

GUARANTEE It J-M Dry Batteries do not prove satisfactory, we will supply new batteries cluding transportation charges.

The minute you begin to sell J-M Dry Batteries you put your battery business on a bigger and better-paying basis. Other dealers are doing it. Why not you? Our nearest Branch can ship you a trial barrel same day order is received.

Write nearest Branch for Booklet and Prices to Dealers

#### H. W. JOHNS-MANVILLE CO.

Boston Buffalo

Cincinnati Cleveland Los Angeles New York Seattle Omaha St. Louis Petroit Indianapolis Minneapolis New Orleans San Francisco New York Seattle Omaha St. Louis Pittsburgh 1951

For Axles that "Stand Up" and satisfy on every point, specify



utomobile Axles

LEWIS SPRING & AXLE CO., Jackson, Mich.





# **EMPIRE GASOLENE**

An automatic regulator of gas and air mixture acting with the throttle to insure perfect combustion under all conditions

> The most scientific and efficient aid to better carburetion.

> Write for our booklet on motor car economy

See the EMPIRE ECONOMIZER at the "Vesta" Exhibit, New York Show

BROWN-TAYLOR-GREENE CO.

1323-25 South Michigan Avenue

Chicago. Ill.

### The New Process Gear Corporation

**Out Gears of Quality** Complete Differentials



The New Process Gear Corporation

### Metal Products Axles

have been used for years in several well known makes and exclusively in two of the most popular cars on the market.

Built in standard types and to specifications. Deliveries as you want them.

Let us quote you prices on your 1914 contracts.

METAL PRODUCTS COMPANY DETROIT. MICH.

## KISSELKAR TRUCKS

#### Complete Line of Commercial Vehicles

All type bodies—special bodies designed. Unexcelled for service, efficiency and economy. KisselKar Trucks have great reserve power. Low fuel cost; sizes to give most economical service under all conditions.

1500 lbs. 1, 1½, 2½, 3½, and 6 Tons

KisselKar Service Buildings at principal points throughout the U. S. are equipped to give an unusual service to owners of KisselKar Trucks. Let us analyze your haulage problem and show you how to make a big saving.

Write for Catalog-Over 200 Styles

Kissel Motor Car Co., 159 Kissel Ave., Hartford, Wis.

# Cox Combination Welding and Decarbonizer Outfit

Save time, money and make extra profit doing your own welding. Outfit complete and simple; repairs worn and broken parts good as new. Welds iron, steel, brass, bronze and aluminum. Safe and sure. Quick repair work. Includes oxygen carbon remover feature. Double work, double profits. Pays for itself in short time. Complete instructions furnished.





ELECTRIC ENGINE STARTERS Electric Lighting Equipment for Motor Cars

Ighting Equipment for Motor Cars APELCO Storago Battories ELECTRIC ENGINE STARTERS
Electric Lighting Engineers for Motor Boots

APELCO House Lighting Plants

Apelco Headlights pierce fog and dust as well as darkness

#### THE APPLE ELECTRIC COMPANY

America's Leading Manufacturer of Electrical Equipment for Motor Cars and Motor Boats

64 Canal Street

Dayton, Ohio

# Kelly-Springfield

#### Automobile Tires



No, experience isn't everything in tire-making. Neither is real rubber and neither is handworkmanship. But the three, taken together, in Kelly-Springfield Tires and Tubes, cover just about every requirement that has yet occurred to the severest critics.

#### KELLY-SPRINGFIELD TIRE COMPANY

Cor. Broadway and 57th Street, New York

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detself, Cincinnati, San Francisco, Los Angeles Cieveland, Raltimore, Seattle, Atlanta, Akros, O., Buffale.

The Bearn Tire & Rusber Co., Columbus, O. H. B. Olmstod & Son, Syracuse, N. Y.
Boos Rubber Co., Deriver, Culo.
Bouthern Hows. & Woodstock Co., Ltd., New Atthinson Tire & Supply Co., Jackson Ville, Fia.
Contral Rubber & Supply Co., Indianapolis, C. T. France & Co., Castleton, S. L.
Ind. & S. Aute Tire Co., Lataltod, T. Conto, Can.



The **best** car value in the market and a 10% greater net profit for the dealer are the two big inducements we offer live aggressive direct agencies. Write today.

#### ABBOTT MOTOR COMPANY

Detroit

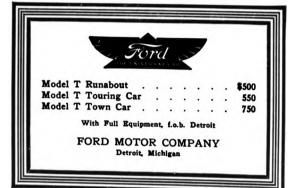


Michigan U. S. A.



Send for Pleasure or Commercial Catalogue

KNOX AUTO COMPANY SPRINGFIELD, MASS.









Bloomfield

New Jersey

Multibestos is made of the finest asbestos firmly interwoven with brase wire. It has the greatest efficiency and durability.

STANDARD WOVEN FABRIC CO., Frankstonerin BRANCHES—New York, 276 Canal St.; Philadelphia, 1437 Vine St.; Chicago, 1430 Michigan Bivd.; San Francisco, Fred Ward & Son; Boston, 903 Boyleston St.



THE circulation of the Motor World is a guaranteed one, sworn to by an affidavit, which will be sent in detail to any one upon request

# You can't short circuit Prove it with this test

These plugs are absolutely soot-proof.

Prove it yourself by holding one in the flame of a candle or lamp until the end is covered with soot. THEN place it in your engine, turn on the power, and it will positively clean itself. The secret is in the porcelain insulator, or "petticoat" which extends to the end of the plug. extends to the end of the plug.

This porcelain becomes so hot at the tip that carbon is burned up the instant it settles. No soot—hence no short-circuit.

Over 400,000 high-class cars are now equipped with the J-M (Mezger) Soot-Proof Spark Plug. Many of these plugs are still in service after 8 years of use.

#### **GUARANTEE**

The J-M (Mezger) Soot-Proof Plug is backed by a five million dollar concern with a fifty-five year record for square dealing. If any plug does not give satisfactory service, we will replace it with a new one. Price

Write for interesting booklet and special dealer proposition

#### W. JOHNS-MANVILLE CO.

New York Omaha Seattle St. Louis Pittsburgh Syracuse

2195

# Hyatt Roller Bearings



Lead the world in quantity of production. Twelve mammoth factory buildings required to supply the demand.

SERVICE STATIONS 756 Woodward Ave., Detroit, Mich. 1120 Michigan Ave., Chicago, Ill. 4th and Middlesex Aves., Harrison, N. J.

Hyatt Roller Bearing Company Detroit, Michigan



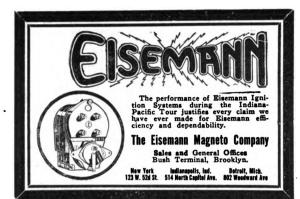
### The Standardized Car

The car that started the stampede to standardization

A Cole franchise is a valuable asset to any dealer. Find out about it.



Cole Motor Car Co. of Indianapolis



### Times Sq. Auto Co.

NEW YORK S. W. Cor. 56th St. and B'way

CHICAGO 1210-12 Michigan Ave.

Motors. Bodies, Tops, Tires, Everything and Anything for the Automobile at Cut Prices

World's Largest Dealers New-Used Automobiles and Accessories

Send for "Our Price Wrecker"

#### Quick Detachable and Demountable Rims

Our new and improved manufacturing facilities insure quality products and prompt deliveries in large or small quantities.

Jackson Rim Company Jackson, Mich.

# 100D

This name on Automobile Tires and Rubber Accessories signifies inherent qualities of material-and workmanship that insure the maximum of service at the minimum of expense.

THE GOODYEAR TIRE & RUBBER CO. AKRON, OHIO

(673)

# REPUBLIC STAGGARD

## National Telescope Pump

Screwed in spark plug hole. ONLY 5 INCHES HIGH. Metal piston rings, handle, noiseless. Guaranteed equal to any \$15 pump on the market. Dealers write for full information and discounts. Without gauge, \$8.50, with gauge, \$9.50

Manufactured by

THE NATIONAL MOTOR SUPPLY CO., 5608 Euclid Avenue, Cleveland, Obio

#### DIXON'S No. 677 GRAPHITE For Transmissions And Differentials GREASE

Send for "Lubricating The Motor" No. 23

Joseph Dixon Crucible Co., NEW JERSEY



### Perfect Carbon Remover \$10 Will remove ALL carbon from cylinders. Basily and in few minutes. Equal of any high-priced outfit. All parts guaranteed. Keeps up efficiency of cars and trucks. BIG MONEY MAKER for garages.

Price \$10

(without oxygen tank)

Usual price \$15. As we sell for cash only and no accounts carried, customers are given \$5.00 off on every outfit. Express companies allow inspection—you take no chances.

Sent prepaid - cash with order or C. O. D.

OXYGEN DECARBONIZER CO. 301 River Street
Send for Information

TROY, N. Y.



Emil Grossman M'f'g Co., Inc. Bush Terminal Building No. 20

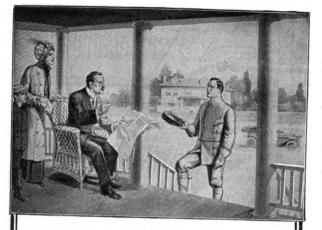
Brooklyn, (New York City) U. S. A.

Detroit, 844 Woodward Ave., Detroit, Mich.

ORBIN-BROWN SPEEDOMETER

"The Speedometer of Absolute Accuracy"

The Corbin Screw Corporation
THE AMERICAN HARDWARE CORPORATION, Successors
New Britain, Conn., U. S. A.
Chicago
Philadelph



# Get Weed Tire Chains at Once!

"I know you are a careful driver, but it is best to adopt every device to prevent accidents.

"I can't afford to take any chances. We have all foolishly depended on rubber alone long enough. It's time to awake to our responsibility. So go at once and buy a complete equipment of Weed Chains and never start out without them when the roads or pavements are slippery or greasy."

# Weed Anti-Skid Chains

Insure Against Anxious Moments



Probably no other device has done so much to raise the factor of automobile safety as WEED CHAINS. They are the proverbial "ounce of prevention" against skidding, the cause of over ninety per cent of all automobile accidents—Life Insurance and Accident Insurance Companies strongly endorse them and recommend their use. Taxical Companies their strongly endorse their their strong their strong their strong to the st

own protection, insist that their drivers put them on when the streets are wet or slippery.

#### **Increasing Demand**

for WEED CHAINS makes them the **most profitable** Automobile Accessory handled by Dealers—Quick and Steady Sales—No Dull Seasons—No Dead Stock—Easily Handled—Liberal Profits—Universal Satisfaction.

Attractive, convincing, decorative, lithographed hangers supplied to dealers upon request.

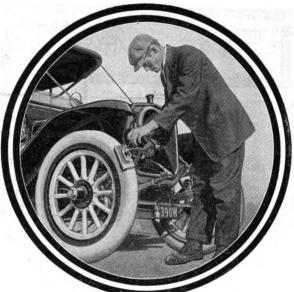
At all dealers selling Auto Supplies

Weed Chain Tire Grip Company 28 Moore Street, New York, N. Y.

Manufactured for Canada by Dominion Chain Company, Limited; Main Office, Suite 801 Shaughnessy Bidg., Montreal, Canada

The state of the s





# The Garage Without a Vulcanizer Is Losing Money--- It Should Make

The garage—where every other part of a car is cared for and repaired, is the logical place for tire repairing.

#### Vulcanizing Pays Big Profits

If a garage has no vulcanizer, both customer and garage lose time when a tire must be sent somewhere else to be vulcanized—the customer is inconvenienced and the garage loses the money it might make by doing the vulcanizing itself.

# SHALER Vulcanizers

Soon Pay for Themselves

We make a complete line of large and small vulcanizers for every requirement, from the small vulcanizer for motorists' use to a complete garage equipment. It's the only complete line of vulcanizers made, and every Shaler Vulcanizer has the exclusive feature of automatic heat control which prevents overcuring or undercuring a tire.

# Let Us Quote You Prices on a Vulcanizer for Your Garage

Just send us a postcard and tell us your requirements and we will send you detailed information with our catalog and booklet, "Care and Repair of Tires" that tells how to use a vulcanizer.

To Dealers
Two-thirds of all the vulcanizers in use are Shaler Vulcanizers. Sell the best—the one that is easiest to sell and gives the best results. Write for full information.

C. A. SHALER CO., 403 Fourth St., Waupun, Wis.

The Largest Manufacturers of Vulcanizers in the World.

Canadian Distributors: JOHN MILLEN & SON, Ltd., Toronto, Winnipeg, Montreal and Vancouver.

# For Sale - Wants

SPRING SPREADERS—To lubricate springs, stops squeaks and makes car ride easy. Price 75c. each postpaid. Dealers write for quantity prices. LEON-ARD VEITH, 1779 Broadway, New ARD York.

PEERLESS LINING DYE. Makes a uniform black lining of all faded and stained linings of tops and curtains. A fast black color that will not fade or wash off. THE COLUMBUS VARNISH CO., Columbus, Ohio.

FORD VALVE ADJUSTERS AND SILENCERS.
50c. for complete set sent postpaid. None better made. Dealers write for quantity prices. LEONARD VEITH, 1779 Broadway, New York.

LIST of automobile registrations direct from the Statehouse—best service at half price—rate, \$2 per month or \$22.50 per year. Special lists promptly compiled at half usual rate. Write for further information before placing your order elsewhere. HALF PRICE AUTO LIST CO., Capitol, Albany, N. Y.

ONE International Harvester Co. auto wagon, type M. W. X. No. 1200, 1914 model, run about 1000 miles. In first-class condition. For description and terms address P. O. Box 135, Cuba, Mo.

GET List of Automobile Registrations direct from State House. Quickest and best daily service. \$45.00 for entire year, or at rate of \$4.00 per month. Special lists of all kinds promptly compiled. PETER DONNELLY, Box 180, Albany,

ROKEN CRANKSHAFTS, cylinders, crankcases, flywheels, gear teeth, pistons, perfectly welded and machined ready to replace. Guaranteed and references. Machinery up to 5 tons welded. ATLAS WELDING WORKS, 74-76-78 Irving St., Rahway, N. J. 15 cents per line of six words, cash with order. - In capitals, 25 cents per line -

A market place where Dealers, Jobbers and Manufacturers may buy, sell or trade used cars, parts and appliances and where help or situations may be secured at a nominal cost.

SPECIAL ATTENTION given to repairing of auto radiators, lamps, fenders, windshields, tanks, and horns of every description. No matter how badly damaged the article may be we repair it to look and serve as new at a great saving of cost. Missing parts for lamps, glasses for windshields, and headlights, put in while you wait. We sell new lamps, radiators, bumpers, horns, windshields, etc., at 50% less than elsewhere. Nickel, silver and brass plating and enameling done on short notice. We always have bargains on hand. Write for particulars. Estimates given. HUDSON AUTO LAMP WORKS, INC., 1648-50 Broadway, New York City. Tel. 8194 Col. and 3864 Col.

PEERLESS EXTRA FINE BLACK JAPAN.

Air drying with a high gloss finish on all metal parts of automobiles. One coat covers solid requiring no primer or undercoat. THE COLUMBUS VARNISH CO., Columbus, Ohio.

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FORD Racing Type Bodies, we build them in several models. Also Hoods, Seats, Tanks and Fenders. AUTO SHEET METAL WORKS, 1530 S. Michigan Ave., Chicago, Ill.

FORD OWNERS—We can make your car the easiest rider made with light or heavy load; no jolts, no jars, no upthrow. Write us. THOMAS AUXILIARY SPRING CO., Canisteo, N. Y.

FOR SALE — Large fireproof garage with splendid business. Address HARRY, care Motor World.

ARE YOU in need of any additional help in any department of your business? Are you out of employment or looking for a better connection? Have you second-hand apparatus of any kind or do you want to buy second-hand material? Have you a factory site for sale or do you want to buy one? If so, use the Want and For Sale column of the Motor World. Six words to the line, fifteen World. Six words to the line, fifteen cents a line. Advertisements can be inserted over a number when it is desired and identity of the advertiser will be kept confidential.

PEERLESS CUSHION DRESSING. Brightens and renews all leather seats and cushions. Will not wash or rub off. Dries in twenty minutes. THE COLUMBUS VARNISH CO., Columbus, Ohio.

A UTOMOBILE Cylinders reground, new pistons and rings fitted. Garage air compressors. CAST IRON BRAZING CO., Manchester, N. H.

MAILING LISTS AND STATISTICS. Owners or dealers; any state, county or city; weekly and monthly supplements at lowest prices. Special lists of Electrics, Trucks, Fords, Studebakers, Overlands etc.

lands, etc.
MOTOR LIST CO. OF AMERICA,
230 News Arcade,
Des Moines, Iowa.

RACING BODIES—We make them to fit any car. Seats, special and stock sizes; Radiators, Hoods, Tanks and Fenders. AUTO SHEET METAL WKS, 1530 S. Michigan Ave., Chicago, Ill.

PEERLESS LAMP ENAMEL. Dries in twelve hours with a high gloss finish on lamps, etc. One coat covers solid. If dull drying enamel is de-sired please specify. THE COLUMBUS VARNISH CO., Columbus, Ohio.

These columns offer you an opportunity to appeal to an audience of 8,000 readers whose merchandising taste is being cultivated weekly to the highest degree by our articles on "Wide Awake Merchandising."

1

### Fiss, Doerr & Carroll Horse Company

East 24th St., Lexington to Third Ave.

Largest Dealers in Horses in the World

WILL CONDUCT AN

### **AUTOMOBILE AUCTION**

Every Thursday, at 3 o'clock P. M.

In Sales Arenas, 139-151 East 24th St.

Cars of both the pleasure and business types will be accepted the day prior to sale for exhibition in the NEW, WELL LIGHTED, SPECIALLY DESIGNED ARENA adjoining regular sales ring and will be offered for disposal on the day designated

To the Highest Bidders, Without Reserve

A UNIFORM RATE OF

#### **5 PER CENT COMMISSION**

Will be charged on all sales of \$100 and over and a minimum fee of \$5 on each car selling for less than \$100.

An Unusual Opportunity to Buy or Sell

EITHER A USED OR NEW CAR FOR ANY PURPOSE.

#### CONSIGNMENTS SOLICITED

WRITE FOR FURTHER PARTICULARS TO
FREDERICK WAGNER, President. Main Office, 155 E. 24th St.
Telephone, Madison Square 3100.

#### **AMERICAN KUSHION KORE**

A tire filler 10 to 20 per cent. lighter than any other tire filler. A big proposition for dealers who are on the alert for more and better business. Write for details.

AMERICAN KUSHION KORE TIRE CO.
Buttalo, New York

For anything in sheet metal that goes onto an automobile ask the

### HAYES MANUFACTURING COMPANY

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Largest Users of Sheet Metal in the World

# Schafer Ball Bearings

Famous For Their Durability

BARTHEL & DALY, 42 Broadway, New York

TO-DAY

### United States "Nobby" Tread Tires

Stand Alone In a Class by Themselves

United States Tire Company, New York

# Woodworth greads

will help you increase your business while benefitting your customers. We will send any responsible dealer a pair on 30 days' trial. Write new. Good Agents wanted for unoccupied territory.

LEATHER TIRE GOODS CO., Niagara Fails, N. Y.

# PERFECTION SPRING COMPANY Specialists Spring Suspension High Grade only

CLEVFLAND, OHIO

#### **Every Stutz Car**

is exceedingly easy-riding and comfortable. The straight line low alung body, deep upholstery and luxurious appointments of the Sturdy STUITZ give it that aristocratic design which lends dignity and quality to a high class motor car. Write today for advance booklet A-15 Sturdy STUITZ Announcement.

STUTZ MOTOR CAR COMPANY, Indianapolis, Ind.



# MOTO METER PATS METER PENDG

Know the Heat of Your Motor While Driving!

MOTOMETER CO., Inc., 904 U. S. Rubber Building,
B'dway & 58th St., N.Y.; Chicago Branch, 1322 Michigan Ave.,

Motometer Jr. \$5.00 for trucks and smaller cars

#### METZ "22" ROADSTER \$475

The "gearless car"—no clutch to slip, no gears to strip—completely equipped, fully guaranteed. 4-cylinder, 22½ H.P. water-cooled motor. Bosch magneto, artillery wheels, best quality clincher tires. Makes 5 to 50 miles per hour, 26 to 32 miles on 1 gallon of gasoline. Great hill climber. You can secure EXCLUSIVE SALE in your territory. Write for Book "B."

METZ OOMPANY, Waltham, Mass., U. S. A.

#### We Sell! You Deliver!

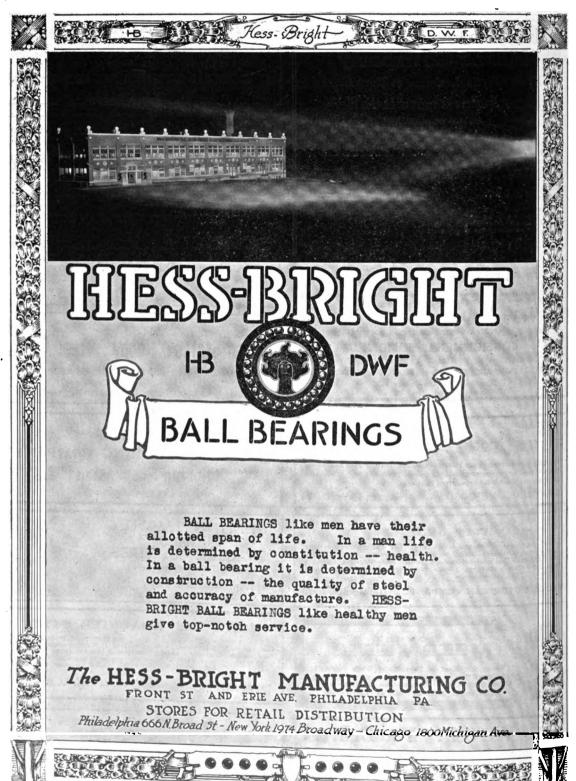
That's how many dealers are cashing in on the Taylor "Noil" Tire Pump, built with plunger and diaphragm. Saves labor—adds to tire life an investment motorists cannot resist. All inquiries referred to dealers Write for liberal dealer's offer TODAY. Please name cars handled.

TAYLOR MFG. CO., P. O. Box 485, A.B., Chicago, Illinois

#### **HESS AXLES**

Now standard on fourteen makes of America's leading cars and still growing. Send for blue-prints and specifications—or consult our engineering department.

HESS SPRING AND AXLE COMPANY CARTHAGE, OHIO



# JUDGE CHATFIELD of the U.S. District Court

in his decision upholding the validity of the Klaxon Basic Patents and declaring the "Newtone" , horn to be an infringement -explains the tone qualities that make the Klaxon note a true WARNING

"When further away the tone of the alarm is more musical but of sufficient volume and penetration to attract the notice in spite of other noises and general air vibrations."

"As the signaling object approaches or as the sound comes from a lesser distance, its harsher, less melodious, more unpleasant and more compulsory qualities increase until, when close at hand, the unpleasant and disturbing elements of the sound overwhelm any musical or tone producing sensation to the hearer."

"The sound has the further quality of indicating the direction of its source."

"These signals . . . . . have a tendency to control physical movement on the part of the person signaled so quickly and so abruptly as to give greater protection than would be furnished by a more musical, pleasant or gradual obtrusion upon the sensory faculties of the person to be warned."

"It is evident that any sound might be used and in a sense be available as a signal."

"Certain sounds, principally because of their musical qualities, are of little use as WARNING signals, if the warning is to be conveyed by the sound and not by a process of reasoning after the sound has drawn attention and observation."

"The warning signal, too, must be loud and possess the other qualities discussed earlier in the opinion."



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Lovell-McConnell Mfg Company Newark, N.J., U.S.A.

KLAXON

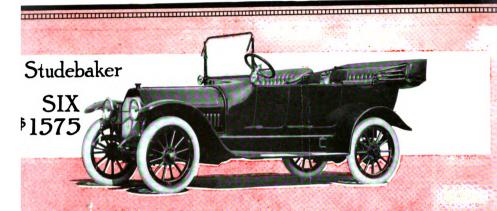
"The Public Safety Signal



KLAXON

Type Composition of this advertisement done in the Klaxon Factory with "Klaxon" type especially designed by F. W. Goudy

••••••••••••••



# Studebaker

The Studebaker SIX is the lowest-priced six-cylinder car in the world.

It is the only manufactured SIX at a figure anywhere near its price.

It is the product of one organization; fourteen great plants perform more than 6,000 manufacturing operations to produce it.

And it is the Stuebaker SIX and is thus once more differentiated from all other cars in the world.

These are the real selling advantages that come to every Studebaker dealer as the unwritten part of his contract.

#### **STUDEBAKER**

Detroit, Mich.

FOUR Touring Car - \$1050 FOUR Landau Roadster 1200 SIX Sedan SIX Touring Car - \$1575 SIX Landau Roadster 1950

- \$2250



A Trade Paper Giving the World's Motor News

Vol. XXXVIII

New York, January 29, 1914

Ten cents a copy Two dollars a year

# Unity of Interest

The owners, the board of directors and the executive officers of the Pierce-Arrow Motor Car Company are one and the same group of men.

This means that the

# PIERCE-ARROW

organization is one of united individuality, hampered by no outside interference or syndicated control. It means that the Pierce-Arrow directors are free to utilize their full resources of capital, brains and energy to the attainment of their ideal—the successful building and marketing of the best possible motor trucks and pleasure cars.

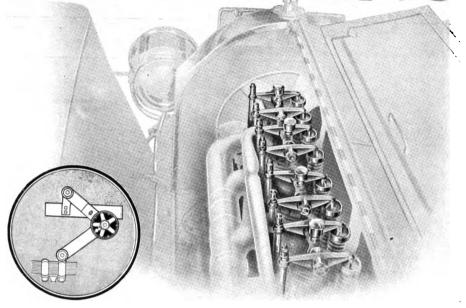
Every individual directly interested in Pierce-Arrow financial success is a working unit in the Pierce-Arrow organization.

The Pierce-Arrow Motor Car Company of Buffalo, N.Y.

Published Weekly by the Motor World Publishing Company, 1600 Broadway, New York

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# MOTOR EASE



Save that engine! Get jarless motor ease with the

# Truffault-Hartford SHOCK "The Pioneer and the Best"

Bump, bump over cobbles-there goes a loose nut! Jounce, bounce over crossings—hear that bolt rattle! Shock after shock—you're all out of adjustment! More, you're badly out-of-pocket simply because the greater your vibration the greater your repairs.

Reduce vibration and dangerous crystallization to their uttermost limits with the Truffault-Hartford Shock Absorber. Cling closer to the road and turn vicious tire tears into ordinary tire wear. Keep your car body from racking to pieces. Cut depreciation in half!

No matter how comfortable your springs, they need the frictional resistance of the Truffault-Hartford. No other shock absorber made controls spring action by the proven principle of frictional resistance. No less than twenty-five of the country's leading cars have made the Truffault-Hartford part of their regular equipment. Make it part of yours.

Send for our catalog now—Today. Four models, \$16, \$35, \$50 and \$60. Ask your dealer.

# HARTFORD SUSPENSION CO.

E. V. HARTFORD, Pres. Office and Works: 142 Bay Street, Jersey City, N. J. Manufacturers of Hartford Electric Starting and Lighting System

New York—1700 Broadway
New York—212-214 West 84th St.
Boston—319-325 Columbus Ave.
Chicago—1458 Michigan Ave.
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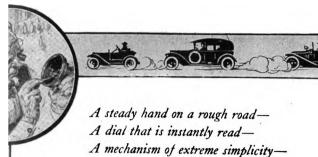
BRANCHES
Newark—511 Halsey St.
Jersey City—141-143 Morgan St.
Kansas City—1803 Grand Ave.
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#### MOTOR WORLD



A principle irrefutably correct -

These features incorporate to make the

# ORBIN-BROWN SPEEDOMETER

"The Speedometer of Absolute Accuracy"

At all times, during all seasons, in all conditions of heat and cold, the Corbin-Brown maintains an unerringly true register.

Both in principle and construction the Corbin-Brown is practically and scientifically correct. The centrifugal principle is the keynote of the one-mechanical simplicity the other.

The parts are few and strong and subject by only a minimum degree to the wear and mechanical ailments so prevalent in the complicated construction of other speedometers.

The centrifugal principle is the logically correct principle of the consistently accurate mechanism. Exterior conditions leave it totally unaffected. This has been demonstrated repeatedly both by scientific and practical tests.

Investigate the Corbin-Brown. One inspection will clearly prove it to be the logical 1914 speedometer equipment.

Write for 1914 Catalog

# THE CORBIN\*SCREW CORPORATION

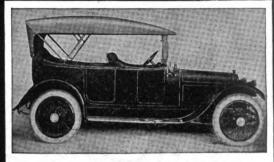
THE AMERICAN HARDWARE CORPORATION, Successor

New Britain, Conn.

BRANCHES: Chicago Philadelphia

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The Hit At Chicago!

#### Was a Feature of the New York Show

Before the show it was generally conceded by the leading automobile engineers and top builders that the SHARRER TOP was the best in its class. Popular opinion was the same at Chicago.

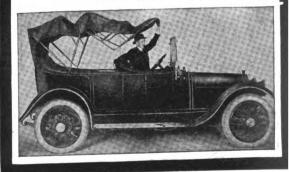
The fact that one well known Automobile Company exhibited a one man top on their best model the opening day at New York and changed the "one man top" to a SHARRER One Hand Top on the second day of the show is the best evidence of the superiority of the SHARRER TOP.

Modern equipment demands the SHAR-RER. Manufacturers should inquire into our proposition. The SHARRER is fully covered by patents and we guarantee to protect you.

We Are At Space No. 39--Armory Balcony

Sharrer Patent Top Co., Inc. 245 West 55th St., New York City

Telephone, 6590 Columbus





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# AMERICAN NAMES FAKED TO BOLSTER CANADIAN SCHEME

Kilborn, Rockefeller and Flagler Not to Build Any Cars in Dominion—Repudiation is Unreserved.

Of many fakes to which the names Rockefeller, Flagler and Kilborn have been unwarrantedly attached during recent years, none have been quite so raw as the story which came from Canada and which was swallowed whole and reprinted conspicuously by at least one American automobile publication last week.

It is to the effect that Horace M. Kilborn, one of the vice-presidents of the powerful National City Bank, of New York, is to become president of the Dominion Motor Car Co., Ltd., of Colbrook, New Brunswick, and that Percy A. Rockefeller and John H. Flagler, who are equally well known in banking circles, are to be directors of the enterprise. It professed to have for its purpose the reproduction of the Rolls-Royce car on this side of the water, although just why such men should desire to manufacture such a well known car in such an out of the way place was in itself sufficient to strongly excite the suspicions of all save too trusting babes in the woods.

"You can say for me," said Kilborn, when he was seen by a Motor World man, "that though there may be a Dominion Motor Car Co. I never heard of it before, nor do I know nor have I ever heard of John A. Graham or Leslie B. Bond, who figure as the company's prospective general manager and sales manager, respectively.

"I have no interest, direct or indirect, in the Rolls-Royce or any other car and have no intention of acquiring such interest, and I am authorized by both Mr. Rockefeller and Mr. Flagler to deny the

story in their behalf. You cannot make the denial too strong.

"The story is absolutely untrue and the use of our names wholly unwarranted. It originally appeared in a Canadian paper about two weeks ago, and the first I knew of it was when I received a telegram from a Canadian bank congratulating itself on our supposed entry into a Canadian enterprise. I have been denying it in writing and by word of mouth ever since. There is not a shadow of truth in it so far as Mr. Rockefeller, or Mr. Flagler, or myself are concerned."

#### Seider to Continue R. C. H. Production.

The Todd, Frank, Friedeberg Co., which purchased the R. C. H. assets in Detroit at the receiver's sale last month, with the announced intention of utilizing the parts on hand and reorganizing the company or selling it as a going concern, have closed a contract with Charles P. Seider, of Detroit, whereby the R. C. H. Corporation and the R. C. H. cars will be continued.

Seider entered R. C. H. affairs late in 1912, when the company's creditors first took charge of its affairs. Later he was elected and served as its secretary. Actively associated with him in the management of the reorganized company will be A. H. Collins, former distributer of R. C. H. cars in Indiana and Michigan.

#### M. & S. Differential for Brown-Lipe?

Fairly reliable reports are circulating to the effect that the Brown-Lipe-Chapin Co., of Syracuse, N. Y., has acquired or is about to acquire rights to manufacture the radical Muehl or M. & S. differential, which employs spiral instead of spur gears. When the report was called to its attention, the Syracuse company replied: "We can tell you nothing about the matter today," which may or may not be significant. It is claimed for the spiral gears that they provide differential action without regard to traction obtainable.

# MARION ADJUSTS FINANCES; RECEIVER IS DISCHARGED

Court Lifts Restrictions and Business Again in Handley's Hands

-Kinsey and Hayes Take

Places in Directorate.

After being in the hands of a receiver since November 3rd last, the Marion Motor Car Co., of Indianapolis, was freed from court supervision on Saturday last, the 24th inst., when the receiver, Jas. E. Kepperley, was discharged.

This action was taken with the consent of the plaintiff, the Kinsey Mfg. Co., of Toledo, the head of which, Isaac Kinsey, has become chairman of the Marion Board of Directors.

H. J. Hayes, of the Hayes Mfg. Co., Detroit, has also been elected a director and vice-president of the Marion company, of which J. I. Handley remains president, Jas. E. Kepperley secretary and J. M. Edsall treasurer.

In his final report to the court the receiver stated that the assets and other holdings of the Marion company are in excess of \$800,000 and that it is understood that its financial affairs have been adjusted in such a manner that it is the intention to continue the business on a larger scale than ever before.

The court allowed the receiver \$3,500 for his services and the receiver's attorneys \$1,500.

#### Durable Dayton Truck is Revived.

Despite appearances that the Durable Dayton truck had passed off the scene, due to the failure on October 11th last of its maker, the Dayton Auto Truck Co., the property has been acquired and the business will be continued by the Durable Dayton Truck Co., which has been organized under Ohio laws with an authorized capital of \$25,0000. The corporators of the new company are B. A. Troxel, J. B. Ford and C. B. Foley.

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# THREE ELECTRICS MERGE FOR ECONOMY IN SELLING

Broc, Argo and Borland-Grannis
Become American Electric Car
Co.—Each Party to Merger
Given Three Directors.

Preceded only by a faint flutter, three of the newer manufacturers of electrical vehicles, the Broc Electric Vehicle Co., of Cleveland, the Argo Electric Vehicle Co., of Saginaw, and the Borland-Grannis Co., of Chicago, have been merged under the style American Electric Car Co., organized under the laws of Illinois with an authorized capital of \$1,500,000. The Borland-Grannis address in Chicago figures as the headquarters of the new corporation.

The basis of the amalgamation is not public property, but each of the three companies is equally represented by three men on the board of directors. F. A. Brand (Broc) is president, Fred Buck (Argo), Bruce Borland and U. B. Grannis (Borland-Grannis) are vice-presidents, and Theodore Huss (Argo) is secretary-treasurer. In addition to these officials, C. W. Brand and M. Johnson (Broc), O. Schupp (Argo) and Cyrus Adams (Borland-Grannis) constitute the board of directors.

While the American Electric Car Co. will market their outputs, and thereby effect economies, for the time being, at least, the three factories will be continued in operation and the three brands of cars be produced under their present names. Whether ultimately one factory and one line of cars will be the order of things has not yet been settled. Vice-President Borland stated that while such a state of affairs is possible, the matter has not yet been given serious consideration.

# Deal in Tire "Seconds" Causes Dispute.

Because the Century Tire Co., of Plainfield, N. J., did not deliver to the Keystone Tire & Rubber Co., a New York City tire dealer, all the "Century seconds" it made between August 27, 1912, and January 1, 1914, or so the Keystone company claims, the latter has brought suit in the Supreme Court for New York county and this week secured an attachment for \$50,000 against the Plainfield concern.

The Keystone's story is that it contracted for the entire supply of "Century seconds" and received 1.000 tires, after which, it learned, the Century company was disposing of its "seconds" to

other people; it claims it stood to make a profit of about \$6 on each tire and that it would have received not less than 8,000 additional tires had the contract been completed. L. Walter Lissberger, president of the Keystone company, estimates the loss at \$50,000 and asks that amount.

Sizes up to 34 x 4 were to have been purchased at 60 and 5 per cent. off and larger sizes at 65 off the list.

## Will Try Again to Make Cars on Coast.

After several months' effort, Y. R. del Valle, the distributer of Detroiter cars on the Pacific Coast, has formed the Mission Motor Car Co., in Los Angeles, and, although no previous effort of the sort has succeeded, he has undertaken to produce Mission cars for the Pacific Coast trade. They will be of the low-priced variety and are after the design of H. L. Palmer, secretary of the company, who, at various times, was identified with Eastern automobile factories, the Ford and Studebaker among the number. Del Valle himself is president of the Mission company, the other officers of which are Edward Barstow, vice-president, and J. W. Kays, treasurer. They have leased manufacturing quarters at 1310-12 South Grand avenue, Los Angeles, in which the necessary machinery is being installed.

## Dealer Gets Judgment for Deposit.

The Raleigh Motor Car & Machine Co., of Raleigh, N. C., which at one time was a Jackson dealer, secured a verdict of \$1,786.10 in the Supreme Court for New York county against the Jackson Motor Co., of Jackson, Mich., as part of an unreturned deposit on a dealer's contract.

The Raleigh company signed up to sell Jacksons in 1910 and deposited \$2,000, \$420 of which it was refunded as it took cars. It claimed, however, that the Jackson company failed to ship cars as ordered and interfered with the retail sales and the completion of the contract. The dealer, therefore, asked that the remainder of the \$2,000 be refunded and the Jackson company refused, wherefore the suit was brought.

# Stewart-Warner Earns Over a Million.

According to its report for the year 1913, the net earnings of the Stewart-Warner Speedometer Corporation amounted to \$1,145,132, which is equivalent to 10 per cent. on the common stock after paying 7 per cent. dividend and the sinking fund on the preferred. The profit and loss surplus on January 1st was \$573.027.

# COMPANY FORMED TO BEAR KRIT'S FACTORY EXPENSES

Dove-tailing Organization to Aid Manufacturer in Increasing Profits — "Krit Sales" and the Men Behind It.

Influenced by the large orders in hand and by the high standing of Walter S. Russell and others identified with the Krit Motor Car Co., of Detroit, its creditors have again extended a helping hand which it is believed will tide over affairs until the inflow of cash will wholly relieve the situation.

The assistance takes the shape of the Krit Sales Co., capitalized at \$100,000, which has been formed to provide materials and to pay for the labor entering into the construction of Krit cars, all profits on which are to go to the Krit Motor Car Co. itself, the Sales company being reimbursed only for its capital invested at 6 per cent. interest.

The officers and directors of the new Sales company are: President, Henry W. Standart (secretary and treasurer Northern Engineering Works); vice-president, Walter S. Russell (president and manager Russell Wheel & Foundry Co.); John J. Ramsey (vice-president and treasurer A. C. Knapp Co.); Albert W. Russell (president Russell Motor Axle Co.); Frank W. Blair (president Union Trust Co.).

Standart is president of the Krit Motor Car Co. and Ramsey and Albert W. Russell are directors, the others being L. M. Hamlin (McCord Mfg. Co.), W. L. O'Neill (Stromberg Motor Devices Co.) and Alex. C. Long (Union Trust Co.).

Four of these directors entered the company in August last, in accordance with the terms of the creditors' agreement whereby extensions running from February 1, 1914, to February 1, 1916, were granted. At that time, an equal number of directors resigned to make room for the creditor-directors and the Krit stockholders surrendered 51 per cent. of their holdings to the Union Trust Co. as the trustee with voting power.

#### Hupp Sends Dunlap to South Africa.

C. H. Dunlap, export manager of the Hupp Motor Car Co., of Detroit, sailed Saturday last for a business tour which will carry him into South Africa. He will return via Buenos Aires, Argentina, where the Hupp company only this month established Peter S. Steenstrup as its South American representative.

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# MOTOR WORLD

# CLAIM 74-YEAR-OLD WOMAN WAS AN "ANGEL" TO COLBY

Suits Instituted and Threatened
Disclose Stories of Strange Financing — Name Guardian
to Save Her Fortune.

Although the Colby Motor Co., of Mason City, Ia., has been taken over by the Standard Motor Co., composed chiefly of Iowa bankers, its troubles are by no means over. Several suits are pending against it and others are threatened, principally by bankers who hold accommodation notes against the company. It is stated that litigation of the sort in prospect will involve more than \$300,000 and will throw light on the manner in which the Colby company was kept affoat.

If these stories be true, it owes its life to a feeble-minded 74-year-old woman, Mrs. Mari Walch, for whom a guardian, in the person of her son, was appointed early last month. When her husband died he left a fortune variously estimated to be between \$200,000 and \$500,000, and it is now stated that whenever money was needed to operate the Colby plant she was visited and prevailed upon to give accommodation notes which were cashed by bankers and others throughout the northern half of Iowa.

It is said that the old lady's paper is widely scattered and that should any of its holders attempt to enforce collection the attempt will be legally resisted, as it is claimed that she was not of sound mind when she signed the notes. It was on allegement of unsound mentality, inability to manage her affairs, squandering her property, assuming accommodation notes in the sum of \$300,000 and other similar investments that her son was appointed Mrs. Walch's guardian.

Lindsay Axle Men Want Back Royalty.

The echoes of the Lindsay axle patent, which at one time threatened to dominate the industry, were awakened last week in the Indiana Superior Court by the filing of a suit by the Lindsay Auto Parts Co., of Indianapolis, against the Rauch & Lang Carriage Co., of Cleveland.

Judgment in the amount of \$5,000 was asked, of which \$3,600 is for back royalty alleged to be due. The Lindsay license, which was granted to Rauch & Lang in 1911, called for the payment of royalty of one-fourth of 1 per cent. of

the retail list price on all electric cars manufactured since the date of the contract. According to the complaint in the case, Rauch & Lang have manufactured 2,300 electric cars, the list value of which is \$6,400,000, on which the total royalty would be \$16,100. As, however, Rauch & Lang paid \$12,000 when the license was issued, the sum in dispute is, as stated, only \$3,600.

Goodyear to Add \$4,000,000 to Capital.

Considering the move advisable because its business has more than doubled during the past two years and is steadily increasing, the Goodyear Tire & Rubber Co., of Akron, has taken the first steps toward adding \$4,000,000 to its capitalization. The plan provides for an increase of the preferred stock from \$5,000,000 to \$7,000,000 and the common from \$5,038,800 to \$8,000,000.

The arrangement will carry with it a 20 per cent. stock dividend on the existing common and the right to subscribe for new common at par in the ratio of 30 shares for each 100 now held. Holders of the preferred will be permitted to purchase two shares of new preferred at par for each five shares now held, and to buy one share of new common at par for every four shares of new preferred which may be purchased. The sale of the stock, it is stated, already has been underwritten. The plan will be acted on at a meeting of the stockholders which has been called to be held March 3rd next.

Briggs-Detroiter and Distributer "Out." Although relations seemed very satisfactory a few months ago when Julius Lichtenstein became Eastern distributer of Detroiter cars, discord apparently has crept in, for the Briggs-Detroiter Co. this week sued Lichtenstein in the Supreme Court for New York county for \$13,837.50. It is claimed he agreed to take 500 cars between October 17. 1913, and September 30, 1914, and between October 17 and December 19/29 cars were shipped with sight draft bill of lading attached, f. o. b. Detroit. On the total of \$22,293.75 it is claimed he paid but \$8,456.25, leaving the balance of \$13.837.50.

#### Castle and Monson End Partnership.

Fred E. Castle having purchased the interests of his partner, C. S. Monson, in the automobile material firm, Castle & Monson, of Detroit, the firm style has been changed to the Fred E. Castle Co. The business will be conducted at 870 Woodward avenue, and a branch will be established in Indianapolis.

# COLUMBUS BUGGY REVIVES AS "NEW COLUMBUS BUGGY"

Creditors Who Bought Assets from Company to Continue Business— To Build "Gas," Electric and Horse-Drawn Vehicles.

As the outgrowth of several conferences of the creditors who purchased and have been operating the Columbus Buggy Co., of Columbus, O., since May last, the New Columbus Buggy Co. was organized on Saturday last, under the laws of Ohio, with an authorized capital of \$500,000. George W. Lattimer, a wholesale druggist, and one of the two men who have been directing the operation of the factory in the interests of the purchasing creditors, was elected president of the new company, the other officers of which are as follows: F. R. Sharp, vice-president; D. N. Postlewaite, secretary; George W. Bright, treasurer. These officers and O. A. Miller, F. O. Schoedinger, Robert Jeffrey and T. J. Cavanaugh comprise the board of directors.

Of the new capitalization, the creditors concerned in the purchase and reorganization will be given stock in proportion to their claims, which amount to about \$464,000. This will leave some \$36,000 on hand for organization purposes. The new company includes approximately 85 per cent. of the creditors of the old Columbus Buggy Co., who paid \$310,000 for the assets. At that time, the McCue Co., of Buffalo, acting in concert with several creditors, objected to the sale of the property in one parcel, but its objections were overruled and these objecting creditors will not be paid until the matter is cleared up.

According to officers of the new company, the business is in a fluorishing condition and all the departments of it will be continued-that is, the manufacture of both gas and electric automobiles and horse-drawn which, as its title suggests, was the original business of the Columbus Buggy Co., which was organized in the late 70's and became one of the largest producers of buggies in the world. It failed about a generation ago but recovered from the embarrassment only to fail again in January last, after having taken on automobiles. At that time it was stated that while the manufacture of electric cars and horse vehicles had proven profitable, the gasolene car was the hole through which the profits

# McLEOD HAS NO CHANCE TO GET \$3,000 FROM MAXWELL

Court Says Former District Manager Should Have Made Claim
Against U. S. Motor—Too
Late, Request is Denied.

Alexander I. McLeod, who once was a district manager for the United States Motor Co. in the Middle West, cannot collect \$3,000 from the Maxwell Motor Co. on his contract, which was half-terminated when the latter corporation succeeded the United States Motor Co. He has been endeavoring for some time in the United States District Court in New York City to enforce this claim, which this week Judge Hough denied in emphatic terms.

The court's ruling also bears on any other claims which may be brought; Judge Hough said he had ruled several times before that the Maxwell company could not be compelled to pay claims which stood against the defunct corporation and stated in substance that those who did not submit their claims when the assets were transferred more than a year ago now have no redress.

To arrive at a decision in McLeod's case it was necessary to take extensive testimony before a master, and McLeod at this time explained his connection with the company in detail. He said he signed up August 1, 1912, at \$6,000 a year to act in the territory in and about Cleveland, Toledo, Columbus and Detroit, and that even after the receivers were appointed he drew a salary. He objected, however, when he got a letter from Walter E. Flanders saying McLeod was not to be carried on the Maxwell payroll any longer. Then he prepared his claim.

After he lost his position entirely, early last year, he cast about for another, he stated, but was unsuccessful; some "nibbles," he declared, involved an investment of from \$5,000 to \$50,000 and these did not appeal to him because of previous investment experiences. He said he owned about \$250,000 of stock in the United States Motor and was "pretty well cleaned out" by that failure. However, he is interested in several other businesses and manages to "keep the wolf from the door."

As to his connection with the Detroit Reduction Co., which makes money out of garbage, the lawyers asked him if he was not "more or less active" in that company. "Less," replied McLeod. The attroneys tried to get a different statement, but McLeod said "less active" was just the right combination of words.

They quizzed him about a vacation trip he took to Nassau when he was still drawing salary, and when he said he went there for his health they asked him if he was sick. "No," he said, "I was as well as I am now. I just went to get a little more health; accumulate a little."

35% Drops Its Case Against Apple.

Apparently desirous of clearing the records of the numerous cases it instituted for failure to comply with the terms of its catalog advertising contract, the 35% Automobile Supply Co., which last week discontinued an action against the Hartford Suspension Co., this week dropped the suit it brought against Vincent Apple, trading as the Apple Electric Co., of Dayton. O. The suit was in the Supreme Court for New York county and \$2,800 was demanded, a small part of which was paid in settlement.

The suit was like many others. The contract specified that the defendant would use advertising in the 35% catalog for a year and pay for it in goods, but after a small payment in goods had been made the manufacturer generally repudiated the agreement.

Ward Electric May Build New Factory.

Despite publication of the report that the Ward Motor Vehicle Co., of New York City, has purchased a large tract of land in Mount Vernon, N. Y., Charles A. Ward, the head of the company, states that while such a deal has been in prospect it has not been consummated. The Ward company is now located in The Bronx and, Ward stated, hopes to enlarge and, among other things, do more with the pleasure car it introduced to the public at the New York show. The company heretofore has built an electric delivery truck.

Dunlop Begins Wire Wheel Production.

Its plans having fully matured, the Dunlop Wire Wheel Corporation of America has ceased importing and is now actually producing wheels for the American trade. This has been rendered possible by the acquirement of a four-story cement factory 72 x 162 feet, at 32 Crane street, Long Island City, N. Y.

White Opens Branch in St. Louis.

The White Co., of Cleveland, has discontinued its dealership connections in St. Louis and has established a factory branch; it is in the former dealership location. 3420-22 Lindell avenue. Herbert N. Rosenberg, formerly with the Chicago branch, is manager.

# 1913 AUTOMOBILE EXPORTS ADVANCE BY 16% PER CENT

Shipment of Cars and Parts \$5,000,-000 Greater Than in 1912— Total of All Products Approximates \$40,000,000.

The exportation of automobiles, parts, engines and tires, according to a preliminary report of the Department of Commerce, amounted to approximately \$40,000,000 during the calendar year 1913; of this engines and tires constitute \$5,000,000, which leaves the value of cars and parts \$35,000,000, a gain of 16 2/3 per cent. over the valuation of cars and parts exported during the year 1912; it then was approximately \$30,000,000.

Owing to a slightly different system of tabulating, the total value of cars, parts, engines and tires was not available in 1912 and the total figure cannot be compared with the \$40,000,000 figure of 1913. However, ten years ago the total exports were but \$2,000,000.

"Statistics for the 11 months ended with November," stated the department, "show that 23,579 passenger automobiles and 921 commercial vehicles, valued at about \$25,000,000, were sent abroad, and if to this is added the nearly \$6,000,000 worth of parts of automobiles, \$3,500,000 worth of tires and \$1,500,000 worth of automobile engines the total is approximately \$36,000,000. Adding the shipments to Porto Rico, Hawaii and Alaska fully justifies the estimate of \$40.000,000 for the full calendar year 1913."

The total value of automobiles and parts thereof imported in 1909 was nearly \$4,000,000 and last year about \$1,5000,000. America's largest customer is Canada, shipments to that country in the II months of 1913 being 5,824, valued at \$7,870,086. The United Kingdom is the next best customer, the total number sent to that country being 4,504, valued at \$3,482,301.

Jeffery Disposes of its Last Branch. Having disposed of the last of its six branches—the one in Philadelphia—the Thomas B. Jeffery Co. has consummated its policy of retiring from direct participation in the retail business. The branch in Philadelphia has been taken over by the Jeffery Sales Co., which is composed of three men who formerly were identified with it—J. S. Hurley, R. L. Butler and G. E. Matteson. They have leased the Jeffery building at the corner of Broad and Race streets, and will handle the former branch territory.

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Madison, Wis.—Western Parlor Frame Co., under Wisconsin laws; to manufacture automobile bodies.

Emporia, Va.—Weiss Automobile Corporation, under Virginia laws; authorized capital, \$1,000; to deal in motor cars.

Canton, O.—Mutual Tire League Co., under Ohio laws; authorized capital, \$10,-000. Corporators—Fred Baker, V. L. Ney and Glen I. Hay.

Birmingham, Ala.—Nolan Tire & Rubber Co., under Alabama laws; authorized capital, \$1,000. Corporators—C. A. Nolan and D. Nolan.

Union, Ga.—Model Garage Co., under Georgia laws; authorized capital, \$6,000; to operate a garage. Corporators—J. G. Going and J. E. Burbank.

Dallas, Tex.—Quick Tire Service, under Texas laws; authorized capital, \$10,000. Corporators—H. L. Williford, K. B. Young and K. A. Ward.

Columbia, S. C.—Black-Frasier Motor Car Co., under South Carolina laws; authorized capital, \$25,000. Corporators—J. M. Black and J. G. Frasier.

Lansing, Mich.—Alder Motor Car Co., under Michigan laws; authorized capital, \$10,000. Corporators—Ross Skinner, Guy Hamilton, Clarence Alder and Frank M. Woodward.

Boston, Mass.—Auto News Publishing Co., under Massachusetts laws; authorized capital, \$25,000. Corporators—Arthur B. Reed, George G. Reed and Mamie O. R. Means.

Everitt, Wash.—Everitt Auto Mfg. Co., under Washington laws; authorized capital, \$10,000. Corporators—Theodore Shade, C. C. Edwards, P. E. Muller and James O'Neill.

Detroit, Mich.—North Woodward Garage, under Michigan laws; authorized capital, \$2,500; to operate a garage. Corporators—Maud Brosch, Edwin Brosch and Fred A. Bowen.

Dover, Del.—National Spoke & Nipple Co., under Delaware laws; authorized capital, \$25,000; to manufacture spokes and nipples for use in the manufacture of automobile wheels.

Somerville, Mass.—Park Garage Co. under Massachusetts laws; authorized capital, \$10,000; to operate a garage. Cor-

porators—Arthur N. Park, Fred R. Curtis and William W. Kennard.

Mobile, Ala.—Short Automobile Co., under Alabama laws; authorized capital, \$4,000; to conduct a general motor vehicle business. Corporators—C. W. Short, J. R. Barren and F. M. Barren.

Toledo, O.—Knight Rubber Co., under Ohio laws; authorized capital, \$10,0000; to deal in rubber goods. Corporators—H. E. Andreds, C. B. Motz, R. I. Moore, M. L. Rigle and E. M. Starr.

Cincinnati, O.—Auto Sales & Repair Co., under Ohio laws; authorized capital, \$25,000. Corporators—Louis Haerling, Harry Thieken, E. C. Clark, J. W. Dunnell and Thomas H. Kelley.

Columbus, O.—New Columbus Buggy Co., under Ohio laws; authorized capital, \$500,000. Corporators—O. A. Miller, F. L. Stein, R. G. Watson, Thomas J. Kavanaugh, and D. N. Postlewaite.

Boston, Mass.—H. W. Johns-Manville Co. of Massachusetts, under Massachusetts laws; authorized capital, \$25,000; asbestos products. Corporators—Harry R. Trainer and Henry D. Castle.

Dallas, Tex.—Motor Inn Sales Co., under Texas laws; authorized capital, \$15,000; to conduct a general motor vehicle business. Corporators—Louis Caspar, Claud C. Bowers and Dan Davies.

Cleveland, O.—Yuster Axle Co., under Ohio laws; authorized capital, \$200,000; to manufacture axles. Corporators—W. R. Hopkins, E. H. Parkhurst, M. L. Yuster, Ben F. Hopkins and E. W. Farr.

Evansville, Ind. — Allen Automobile Co., under Indiana laws; authorized capital, \$10,000; to conduct a general motor vehicle business. Corporators—C. A. Hughes, A. Underwood and G. C. Allen.

Cleveland, O.—Euclid Square Supply Co., under Ohio laws; authorized capital, \$15,000; to deal in automobiles. Corporators—C. M. Willis, J. A. Harris, C. K. Fauver, V. F. Davis and M. L. Hondus

Chicago, Ill.—Chicago Rayfield Motor Sales Co., under Illinois laws; authorized capital, \$10,000; to conduct a general motor vehicle business. Corporators—Jacob C. Krafft, John H. Krafft and Walter A. Krafft.

Crawfordsville, Ind. - City Taxicab

Co., under Indiana laws; authorized capital, \$10,000; to conduct an omnibus business. Corporators—James F. Stephenson, Howard A. Van Dyke and F. F. Cummings.

Chattanooga, Tenn. — Chattanooga Speedway & Motordrome Co., under Tennessee laws; authorized capital, \$10,-000. Corporators—J. H. Russell, W. H. Delany, W. E. Sims, A. W. Boyd, and W. H. Payne.

Joliet, Ill.—Dayton Cycle Car Co., under Ohio laws; authorized capital, \$50,000; to manufacture and deal in automobiles, cyclecars, accessories, etc. Corporators—T. J. Moore, John Storch and T. F. Donovan.

Queens, N. Y.—Pelham Motors Co., under New York laws; authorized capital, \$100,000. Corporators—Harold R. Cailisen and Charles A. Singer, Jr., both of Larchmont; Harry Hoolfs, 159 West 97th street, New York City.

New York, N. Y.—Duplex Tire Co., under New York laws; authorized capital, \$1,000; to conduct a tire repair shop. Corporators—Joseph E. Finney, 461 Edgcomb road; Gertrude and Jas. Martin, both of 145 East 53rd street.

Sea Cliff, N. Y.—Senrab Carburetter Co., under New York laws; authorized capital, \$25,000. Corporators—L. I. Barnes, Sea Cliff; E. H. Madison, 567 Bainbridge street, Brooklyn; T. H. Hogman, Jr., 605 Quincy street, Brooklyn.

Wilmington, Del. — Midwout Motor Truck Co., under Delaware laws; authorized capital, \$500,000; to manufacture all kinds of vehicles, engines and machines. Corporators—J. C. Potts, Easton, Pa.; P. L. Garrett and E. C. Body, both of Wilmington.

McKeesport, Pa.—Ninth Avenue Garage Co., under Delaware laws; authorized capital, \$15,000; to manufacture, sell and deal in and with automobiles, tires, oils, grease, etc. Corporators—George Baehr, W. H. Baehr and George L. Baehr, all of McKeesport.

Dobbs Ferry, N. Y.—Mathews Sales Co., under New York laws; authorized capital, \$1,000; to conduct a general automobile business. Corporators—H. A. Mathews and H. E. Mathews, both of Jackson, Mich.; John McLaren, 154 Nassau street, New York City.

# PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few Leave the Industry.

J. W. Deiderich has resigned as chief engineer of the Universal Motor Truck Co. He previously was connected with the Federal Motor Truck Co.

Homer N. Kerr has been appointed sales manager of the Convertible Body Corporation, of New York. Previously he was connected with the Ford Motor Co.

E. LeRoy Pelletier has been engaged as advertising counsel for the Lozier Motor Co., of Detroit. He will, however, continue to serve in the same capacity for the Maxwell Motor Co.

Frank S. Corlew has resigned the post of sales and advertising manager of the Cameron Mfg. Co., of New Haven, Conn. He will become sales manager of the Euclid Motor Car Co., of New York City, which proposes to manufacture cyclecars.

Frank W. Skinner, who three months ago left the advertising agency business to assist in organizing the Zip Cyclecar Co., in Davenport, Ia., has resigned as secretary of that company, with which he has severed all connections. His successor is W. T. Waterman, a Davenport lawyer.

F. C. Benson, formerly president of the James Motor Co., of Syracuse, N. Y., and later connected with C. Arthur Benjamin, Inc., has been appointed a factory representative of the Apperson Bros. Automobile Co., of Kokomo. He will travel in New York, New England and Lower Canada.

To fill the vacancy caused by the resignation of W. G. Houck, Joseph D. Porter has been appointed sales manager of the American Voiturette Co., of Detroit, maker of Keeton and Car-Nation cars. Porter has been identified with the industry for many years, during the past seven of which he has served the Garford Co., of Elyria, in various capacities.

In order to devote himself more thoroughly to the development of the Entz electric transmission and the organization of the company which will market it, Ray M. Owen has resigned the presidency of the Yellow Taxicab Co., the largest enterprise of the sort in New York City. He has been succeeded by

H. R. Swartz, who previously was the Yellow Taxicab's vice-president.

Fred E. Moskovics, than whom few men are better known in the industry, has been appointed commercial manager of the Nordyke & Marmon Co., of Indianapolis. He has served several of the best known concerns in the industry, quite recently as sales manager of the Remy Electric Co., and still later as secretary and sales manager of the Jones Electric Starter Co., of Chicago.

#### Herff-Brooks the Lowest-Priced "Six."

The Herff-Brooks Corp., of Indianapolis, Ind., which in August last was incorporated with \$100,000 capital to market the entire output of the Marathon Motor Works of Nashville, Tenn., has taken over the automobile department of the Wayne Works in Richmond, Ind., and already has commenced the production of both four- and six-cylinder cars of its own and under its own name. That part of the Wayne Works which is devoted to the production of parts, however, remains undisturbed, production going on as heretofore. The new Herff-Brooks car, which in the six-cylinder model lists at \$1,375 and therefore is the lowest-priced "six" on the market, is no relation to the car at one time produced by the Wayne Works but some time ago discontinued. Both the fourand six-cylinder Herff-Brooks models carry complete equipment, including electric lighting and engine starting system; the "four" sells for \$1,100. In addition, the Indianapolis company will continue to handle Marathons.

## Kelley and Carples Form Partnership.

P. J. W. Kelley, once identified with the Splitdorf organization, and James M. Carples, who long had to do with the importation of Mercedes cars, have formed the Kelley Co., in New York, to handle the windshield joint fittings and other specialties made by George Beaton & Son, of London. The goods were once made here but the contract was canceled; Carples, however, secured the American rights when abroad several months ago.

# McDuffee Regains the Kissel Account.

The McDuffee Automobile Co., of Chicago, which recently took over the Peerless agency, has also acquired the Kissel car account, which it handled some three years ago, the Kissel branch having been merged with the McDuffee institution. It carries with it the distribution of Kissel cars and trucks in Chicago and the greater portions of Illinois, Michigan, Indiana and Iowa.

# KLAXON STRIKES AGAIN AT RIVAL HAND HORN MAKERS

Hales Pilot to Court and Gets Restraining Order in Sparton Case

—Makes Newtone Victory
a Chief Argument.

Pressing its advantage gained by the decision sustaining the Klaxon patents in the Newtone case and in line with its action against the Johns-Manville Co., of New York, for handling the Long hand-operated horn, the Lovell-McConnell Co., of Newark, N. J., this week filed suit in the United States District Court in New York City against another handhorn maker, the Nonpareil Mfg. Co., which manufactures the Pilot brand, which was placed on the market only a few months ago. The complainant in the case, of course, charges infringement of the Klaxon patents Nos. 923,048, 923,-049, 923,122, the favorable decision in the Newtone case being cited as grounds for the quick issue of the usual injunction and accounting.

To get quick action in its attack on the Sparton horn, made by the Sparks-Withington Co., of Jackson, Mich., the Lovell-McConnell company has also filed motion for a preliminary injunction in its action filed in August last against the A. Elliott Ranney Co., of New York. Eastern distributer of Hudson motor cars. The temporary restraining order and order to show cause were signed by Judge Mayer in the Federal court in New York City on Monday last and is returnable tomorrow, the 30th inst.

In moving papers it is alleged that the infringement consists of sale of Hudson motor cars equipped with the Sparton horn as well as sale of horns separate from the car. It is alleged that the Hudson Motor Car Co. is a party in interest insomuch as it furnishes the defendant with the infringing articles and guarantees the defense. The Sparks-Withington Co., makers of the Sparton, are also alleged to be parties in interest because they furnish Sparton equipment to the Hudson Motor Car Co. and undertake the defense of the suit by paying the expenses and putting their own patent counsel in charge.

#### Date Set for Sale of Nyberg Assets.

February 16th has been set as the date for the trustee's sale of the Nyberg Automobile Works in Anderson, Ind. The property, including accounts. has been appraised at \$75,715. 1060

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# In Salesroom and Garage



The McDuffee Automobile Co., of Chicago, has taken over the Kissel Motor Co., a factory branch of the Kissel Motor Car Co., of Hartford, Wis. Both the sales and service departments of both companies will be continued temporarily, but it is planned eventually to use the Kissel quarters for truck sales and service. The McDuffee company introduced the Kissel car to Chicago in 1907 but the business was taken over by a factory branch in 1910. The agencies which the McDuffee company has handled will be continued in connection with the Kissel line.

Partridge, Clark & Kerrigan, Inc., has been formed to handle the Briscoe car in New York City and Long Island; temporary salesrooms will be maintained in the quarters of the Briscoe Motor Co. at Broadway and West 59th street. The members of the new company are: Ernest S. Partrtidge, formerly of Wyckoff, Church & Partridge, Commer truck importers; James J. Clark, formerly connected with the Peerless company in New York, and Joseph J. Kerrigan, who is a new entrant to the automobile trade.

J. A. Forsyth, Jr., who has distributed Stearns-Knight cars in Florida for some time, has also taken over the distribution in Georgia and Alabama, succeeding the Stearns-Knight branch; his new territory will be handled under the style Forsyth Motor Co., which has taken the former branch location in Atlanta. He also will retain his Florida business, the headquarters of which are in Jacksonville.

The Crescent Automobile Co., of Millville, N. J., is about to open a garage and machine-shop in the Alhambra Theater building on East Vine street; the building is to be remodeled. Joseph Ennis will be manager and Edwin Van Dusen will be in charge of the mechanical work.

The Stutz Motor Car Co., of Boston, has been dissolved and all debts and credits are in the hands of Millard F. Chase, of 895 Boylston street; the members were Alfred E. Chase and Alfred R. Pilley, of Brooks, Me., and Millard F. Chase, of Winchester, Mass.

The stock of the Holtzmann Auto Supply Co., of Compton avenue and Locust

street, St. Louis, Mo., has been sold to the Koochook Rubber Co., located next door; Holtzmann proposes to remove to Los Angeles and open an accessory and supply store there.

M. E. Raffety & Son, of Sullivan, Ill., have purchased the Manley-Wilkins Garage in Mt. Carmel, in the same State; A. R. Manley plans to enter the drygoods business and E. L. Wilkins has taken a position with the Utilities Co.

A. H. McGraw, who has handled bicycles and motorcycles in Syracuse, N. Y., for 22 years, has taken on automobiles: he has secured the Metz agency and will continue at his former location on West lefferson street.

L. M. Melson, formerly of Remington, N. J., has entered the trade in Trenton, in the same State, under the style Trenton Auto Sales Co. He has located at 99 South Clinton street and will handle Hupmobiles.

The Auto Parts Co. has been organized in Grand Rapids, Mich., by C. M. Lejeune and C. V. Grady; they will handle supplies and accessories at 7 Fountain street northwest.

James F. McGee, of Washington, D. C., has secured permission to build a garage at 1531 M street northwest; it will be of two stories, of steel and concrete and will cost \$16,000.

The Babcock Manufacturers' Supply Co. has opened a garage and machineshop in Watertown, N. Y., on Factory square; the company will specialize in machine work.

The Sackley Motor Co., of Lowell, Mass., has opened a garage and salesrooms at 483 Merrimack street; the company will handle Haynes, Regal and King cars.

C. F. Rouze, who is well known in the truck trade in Kansas City, Mo., has opened salesrooms at 133 McGee street; he has the agencies for Mack and Saurer

Gordon L. Diffenbacher, who operated a garage in Kelly Point, Pa., has purchased the leading garage in Beaverton, in the same State; he will operate

J. E. Ross plans to establish a garage business in Washington, Ia. He has

leased a garage on North Marion avenue recently erected by Jesse Phillipin.

The City Garage & Sales Co. and the Albert N. Phillips Co., of Pittsfield, Mass., have merged; they will transact business hereafter at 501 North street.

L. F. Burman, of Trenton, N. J., has entered the garage trade; he has taken over a garage at 210 West Hanover street and will stock supplies and accessories.

The Bittel-Leftwich Tire Service Co., of Lindell and Grand avenues, St. Louis, Mo., has opened a branch in Springfield. Ill. The company handles Lee tires.

Charles W. Davis and J. Harvey Rinker have entered the garage trade in Martinsburg, W. Va. They have purchased the Shenandoah Garage.

Permission has been granted to Geo. R. Edmindson, of Peoria, Ill., to erect a garage at 1614 Main street; the cost is estimated at \$10,000.

The Acorn Automobile & Storage Co., of St. Louis, is about to open a garage and repair-shop; it has leased quarters at 3253 Olive street.

R. V. Allen, of Rutland, Vt., plans to open salesrooms on Evelyn street; he will handle Maxwell cars in Rutland and Addison counties.

The Aylmer Motor Co. has opened a new garage in Fargo, N. D. The Hillsboro Auto Co., also, has opened a new garage in Fargo.

E. H. De Camp, of Gaffney, S. C., has purchased the Holmes Garage on Limestone street; he has changed the name to Gaffney Garage.

The White Line Garage has been opened in Creston, Ia., at 316 West Montgomery street; Robert S. Harshaw is the proprietor.

Louis and Edward Roesch, of Seattle. . have opened salesrooms at 1112 East Madison street; they have the Velie

G. H. Crosby, of Pomona, Cal., has sold his garage to H. A. Bowman and Lee Williams; it is located on Main street.

J. H. Gillen and M. W. Coulter, of Homestead. Pa., have secured plans for a garage; they will build on 7th avenue.

O. D. McDaniel and Clinton Paul, for-

merly of Virginia, Ill., have opened a garage in Mansfield, in the same State.

J. R. Quatman, of St. Louis, plans to open a garage; he will erect a building for this business at 3682 Folsom street.

Ernest Ostrom, of Akron, Ia., has secured plans for a garage which he will erect in the spring; it will cost \$5,000.

George Lininger, of Greencastle, Pa., is about to erect a garage; he has purchased a site on East Franklin street.

W. C. Malone and A. Deedon have formed a company in Colton, Cal., and will open a garage and repair-shop.

R. E. Reynolds has formed a company in Charles City, Ia., to operate a garage; it will be located on Water street.

Alexander Schneeweiss, of New York City, has entered the garage trade; he is located at 159 West 127th street.

Robert S. Graham of Paducah, Ky., has become a dealer; he has taken the Regal agency for McCracken county.

The Excelsior Sales Co. has been formed in Virginia, Minn. It will operate a garage and salesrooms.

De Forest Montgomery, of Newburgh, N. Y., has taken over the North Avenue Garage; he will operate it.

Andrew Jackson, of Oconomowoc, Wis., is erecting a garage; the site is on South Main street.

E. H. Harris, of Hartford, Conn., has opened a garage on Pearl street; he is an Overland dealer.

E. H. Seoce, of Hartley, Ia., has secured permission to erect a garage in that town.

Alexander Bros., of Leon, Ia., have purchased the E. W. Teal Garage.

#### Recent Losses by Fire.

Chatwood, Pa.—C. P. Shaw; garage destroyed. Loss not stated.

Nashua, N. H.—Lintott Garage; damaged by explosion. Loss not stated.

Brooklyn, N. Y.—Vulcan Iron Works, 106 Bayard street; garage destroyed. Loss, \$10,000.

Philadelphia, Pa.—Herbert Clark, 2031 North 29th street; garage and contents damaged. Loss, \$7,000.

New York, N. Y.—Moore & Munger Co., 602 West 52d street; body factory and contents damaged. Loss, \$100,000.

Detroit, Mich.—Island Garage, 1425-27 Jefferson avenue; Ralph Burton, proprietor; garage destroyed and ten cars damaged. Loss, \$20,000.

Cleveland, O.—M. & M. Auto Supply Co., 500 Prospect avenue; building and contents damaged. Loss, including adjoining property, \$140,000.

# OLEO SHOCK ABSORBER IS POOR ON LEGAL HIGHWAYS

Corporation, Members and Notes
Much Mixed in New York Court

-Amount is Small but Untangling Seems Perplexing.

Morris Horovitz, Jacob M. Ehrlich, Siegfried Laskau, Max Greenberger and the Oleo Shock Absorber Co., all of New York City, are so involved in a suit in the New York City Court that it is difficult to explain the situation, much less guess how the suit will end. The action was brought by Horovitz and is against Ehrlich, Laskau and the company. Greenberger is the attorney for the defense and is or was secretary of the company.

Horovitz claims he is the "innocent holder" of two notes; one, for \$395, was given October 4, 1913, by the Oleo company for two months and in its travels was endorsed by Ehrlich and Laskau the other, for \$175, was given the same date and for the same time by Laskau and was endorsed by Ehrlich and the Oleo company. The total is \$572.50. Horovitz claims the lawyer for the defense and the Oleo secretary at the time the paper was issued are one and the same. That is Horovitz's side of the case.

The other side is that Ehrlich, not Horovitz, is the true owner of the notes and that the suits are for his benefit. It is charged that prior to the making of the notes he was treasurer of the company and represented to Laskau that he held in hand all the accounts due the corporation and that Laskau to secure the return of the accounts caused the Oleo company to give the \$395 note. It is also charged that the corporation had no right to make the note and that no consideration passed from Horovitz when he came into possession of the paper. The payment of the other note, too, is disputed.

#### Minor Business Troubles.

N. L. Bovey, formerly proprietor of the Shenandoah Garage in Martinsburg, W. Va., has filed a petition in bankruptcy; the liabilities are about \$900 and the assets \$445, of which \$350 is outstanding accounts.

The Auto Emergency Light Mfg. Co., of Battle Creek, Mich., has been adjudicated a bankrupt; the failure of a manufacturer. who furnished materials, to fulfill his contracts is said to have contributed to the embarrassment.

Amanda Musselman, administratrix of the estate of Bevelry W. Musselman, has asked that a receiver be appointed for the J. S. Stevens Automobile Co., of Cincinnati, against which a judgment of \$2,000 was recently obtained for his death; she asks that the receiver take charge of the assets and apply them in liquidation of the judgment.

The Foster Motor Car Co., which conducted a garage and repair-shop in Richmond, Va., at 605 West Broad street, has filed a petition in bankruptcy; the assets are \$29,206.67 and the liabilities \$42,237.68. The failure is attributed largely to the collapse of the Commonwealth Bank, in which a large part of the company's funds were tied up at the time.

Savannah Hears Voice of the Tempter.

Savannah, Ga., has heard "from a representative of one of the largest automobile factories," who is seeking a site in the South. The name of the factory is not given, but it is stated that if located in Savannah "it will employ as many as 3,000 men." It is a fair guess that it is a Western cyclecar venture the promoters of which have hired a publicity man and are sending word to the four winds that they want a site, or maybe three or four of them, although it has not yet turned out that many vehicles.

Erbes Buys Minneapolis Factory Site.

L. C. Erbes, of 411 Arthur street, north east, Minneapolis, has purchased a site, 207 x 300 feet, at University avenue and Eustis street, in that city, on which it is stated he will at once erect an automobile manufacturing plant at a cost of \$200,000. The site is at present occupied by a new one-story building, 60 x 180 feet, in which initial operations will be commenced.

White Sues New York on Truck Deal.

The White Co., of Cleveland, brought suit this week in the Supreme Court for New York county against the City of New York for \$8,500, the price of two 3-ton trucks sold to the city March 7, 1912. The company states that the trucks were delivered to the Fire Department and approved, but that the pay for them never has been forthcoming. although they are in use.

Rubberine and Royal Rubber Quit.
The Rubberine Tire Filling & Sales
Co. and the Royal Rubber Cement Co.
both of New York City, have filed certificates of dissolution. In each case the
action is of a voluntary nature.



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## THE FUTURE OF NATIONAL SHOWS.

Each year brings prophecies that the national shows are on their last legs, so to speak—that another twelvemonth will see the end of one or both of them; and, just as regularly, the prophets, whose wishes often are father to the thought, are put to rout. The shows go on and on, and, though they may not emulate the well-known brook, their end is not yet.

Their stimulating properties were never more marked than this year, particularly in the case of the New York exhibition; the effects of the stimulant cannot be stated in dollars and cents and may not have been represented by actual orders in all cases, but that they were widespread and distinctly "feelable" is beyond doubt. The shows "toned up" the trade system as nothing else could have done.

Despite the fact, it is equally clear that they no longer serve their former purpose. With new models, or new series of cars, or whatever else they may be called, making their appearance in July or August, or earlier, and with dealers "signing up" in September October, November or earlier, few actual quantity contracts are possible for established car manufacturers, and with the most notable tire makers and

other equally well known producers of accessories so far convinced that the game is not worth the candle as to hold aloof for the first time, it is not difficult to trace the handwriting on the wall.

During their earlier periods, their educational side was esteemed the greatest value of the big exhibitions, and yet with less need for such education anyone so disposed can distinguish that there has been a return to such first principles, a return so gradual as scarcely to be noticed; for the demonstration, so-called, is now almost the chief outstanding characteristic of the shows—not demonstrations of cars, as once was the case, but demonstrations of a particular feature or features, chiefly of accessories but in a lesser degree of car features, as well.

The effort to show "how a thing works," to prove that it works well and to advantage, whether it be an electric gear shifter, a two-speed axle, a tire pump or a top that sheds water and is operated by one hand or two. In other words, the shows have become or are becoming shows of demonstration and exploitation rather than exhibitions which net real orders or many of them.

It is obvious that this sort of thing cannot long continue; it is obvious that the national shows as such cannot long continue on present lines. Either the much mooted and once tried September or October show will be demanded by car makers—and the demand is doubtful—or both the New York and Chicago exhibitions must be turned over to the dealers' organizations and take their places in the line of local shows. The latter appears the more likely procedure, and but for the stimulating effect of this year's promotions, that step would have been brought one year nearer.

#### NON-SKIDS OF THE WRONG SORT.

While the devising of means for preventing slipping is worthy of all praise, not all inventors seem to be aware of the fact that there are other things to be considered.

The comfort of the occupants of a car is by nomeans a trivial matter; and the car itself carries mechanism that is none the better for vibration. A device that, while affording a grip on the road, at the same time forces the wheels to climb over an endless series of obstructions, each one of which causes a more or less violent bump, may be effective as a non-skid or a mud-hook; but it also is an instrument of torture to passengers and a means of hastening mechanical trouble because it sets up unnecessary vibration. Perhaps even more obvious is the damage that such things do to the roads and, in some cases, to the tires to which they are applied. In the case of a commercial motor vehicle it is not customary to worry over much concerning the driver's comfort; but it is neither good engineering nor good business to subject men or machines to vibration that is avoidable.

Some of the recent developments in non-skid devices suggest that the men responsible for them place a very small valuation on such things.

# COMPETITIONLESS CONTEST BASIS OF GLIDDEN AWARD

Historic Prize to Go to Motorist
Who Comes Farthest to Midsummer A. A. A. Meeting—
Other Trophies by Lot.

Any member of the American Automobile Association who drives his car from Cape Flattery to the midsummer gathering of that organization which is to be held in the White Mountains, will have a fair chance of becoming the possessor of the Glidden trophy for a whole year. He will not have to cover the distance in any prescribed time; nor will he be required to travel the route without "penalization." If he merely covers the distance he probably will get the prize, easily, for it is proposed to award it to the motorist who comes the greatest distance-and no place in the United States is farther away than is Cape Flatterv.

Chairman L. R. Speare of the committee appointed by President Wilson of the A. A. A. to take charge of the midsummer meeting, already has communicated with Chas. J. Glidden, donor of the trophy, and it is expected that he will acquiesce in the change in the deed of gift. Similarly, it is proposed that every one attending the meeting draw lots for the A. A. A. national touring car trophy and that those who drive to the meeting in roadsters and small tonneau touring cars draw for the Anderson (S. C.) cup, all of which is a far cry from the competitive spirit which the trophies originally were designed to stimulate.

It is expected that the meeting will be a big one, and by way of making it still bigger an effort is being made to amalgamate it with the midsummer meeting of the Maine Automobile Association, which also contemplates touring to the White Mountains for the annual "get-together."

## Grand Prize Race to Go 403.24 Miles.

Contrary to first announcements, the length of the Grand Prize race which is to be run over the Santa Monica course in California on February 23rd, has been set at 403.24 miles, which is 48 laps of the course. It was proposed at first that inasmuch as there is no record for 500 miles over ordinary roads, the distance of the race be set at that figure. The Western Automobile Association, which has both the Grand Prize and the Vanderbilt in charge, however, through the

COMING

Jan. 24-31, Montreal, P. Q.—Montreal Automobile Trade Association's pleasure vehicle show.

Jan. 24-31, Rochester, N. Y.—Rochester Automobile Dealers' Association's annual show in Exposition Park.

Jan. 24-31, Chicago, Ill.—Automobile Chamber of Commerce's national automobile show in the Coliseum and First Regiment Armory.

Jan. 26-31, Scranton, Pa.—Automobile show in the State Armory.

Jan. 31-Feb. 7, Minneapolis, Minn.— Minneapolis Automobile Trade Associations' seventh annual show in National Guard armory.

Feb. 2-7, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's pleasure vehicle show.

Feb. 3-7, Montreal, P. Q.—Montreal Automobile Trade Association's commercial vehicle show.

Feb. 3-7, Kalamazoo, Mich.—Kalamazoo Automobile Dealers' Association's fifth annual show in the State Armory.

Feb. 4-7, St. Joseph, Mo.—St. Joseph Automobile Show Association's Show.

Feb. 7-12, Seattle, Wash. — Annual show in the State Armory.

Feb. 7-14, Cincinnati, O.—Automobile Trade Association's show in Union Central Life Building.

Feb. 9-14, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's commercial vehicle show.

Feb. 14-21, Pittsburgh, Pa.—Pittsburgh Automobile Show Association's show in Exposition Hall. Feb. 16-21, Kansas City, Mo.—Annual show.

Feb. 16-21, Toronto, Ont.—Toronto Automobile Trade Association's 10th annual show in Transportation and Horticultural Buildings.

Feb. 17-21, Salt Lake City, Utah—Annual show in the Keith-O'Brien building.

Feb. 18-21, Bloomington, Ill.—McLean County Automobile Club's show.

Feb. 21-28, Newark, N. J.—New Jersey Automobile Trade Co.'s show.

Feb. 21, Los Angeles, Cal.—Vanderbilt road race under auspices of the Western Automobile Association over Santa Monica course.

Feb. 21-March 4, Cincinnati, O.—Automobile Dealers' Association's show in the Music Hall.

Feb. 22-March 1, Hartford, Conn.— Automobile Dealers' Association's show in Park Casino.

Feb. 23, Los Angeles, Cal.—Grand Prize road race under auspices of Western Automobile Association over Santa Monica course,

Feb. 23-28, Omaha, Neb.—Omaha Automobile Show Association's annual show.

March 2, 3, 4, Cincinnati, O.—Automobile Dealers' Association's commercial vehicle show in Music Hall.

March 3-7, Fort Dodge, Ia.—Fort Dodge Dealers' Association's third annual show in the State Armory.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics' Building.

March 9-14, Des Moines, Ia.—Automobile Dealers' Association's annual show.

March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics' Building.

chairman of the racing committee, Leon miles, as originally scheduled, the distance representing 35 laps of the same course.

## Thirteen Arrests in Car Theft Case.

Thirteen men, including John W. Sherwood, an insurance adjuster, have been arrested by the police of New York City in connection with a campaign of wholesale automobile thefts; the police are seeking in addition another young man who is said to have contributed much of the brains of the enterprise and who played the part of an automobile "Raffles."

The insurance adjuster is charged with

T. Shettler, has set its stamp of approval on the shorter distance. The Vanderbilt, which is to be run Feb. 21, will go 294 having been an accomplice of the men who stole the cars and with having acted as a middleman in having the cars returned for rewards of suitable size; several cars have been recovered. It is estimated that \$500,000 worth of cars have been stolen within 12 months, of which \$100,000 worth has not been recovered.

In connection with the disclosures. Secretary of State Mitchell May of New York has directed that both motor and chassis numbers be taken when cars are registered with the State.

#### MOTOR WORLD

# BOOKKEEPER NOW FINDS HE IS AGAIN A REAL EMPLOYE

One Court Said he Was Not—Higher Court Says he is and Has "Employe's" Rights in Bankruptcy—Gives Reasons.

Despite the fact that the New York City Court ruled last April that a book-keeper is not an "employe" within the interpretation of the statutes, the book-keeper, for the present at least, is an employe, the Appellate Term of the Supreme Court for New York county having ruled last week that the lower court was wrong and that a new trial be held.

The action in which these decisions were rendered was brought by William Farnum against the Wishart-Dayton Auto Truck Co., of New York City; he was a petitioner when the company was thrown into bankruptcy more than a year ago, and he also had secured a judgment for \$725 for services as bookkeeper for the corporation. When the judgment was returned unsatisfied as against the truck company he sued 13 stockholders of the corporation for the sum under the stock corporation law. His case was dismissed in the City Court and he appealed with the result that he may now press his claim.

"The plaintiff was a bookkeeper for the Wishart-Dayton Auto Truck Co. of New York, a domestic corporation," said Judge Whitaker, who wrote the opinion. "The action was brought to enforce the liability of the stockholders for plaintiff's wages or salary under section 57 of the Stock Corporation Law. It is conceded that the complaint contains all the allegations necessary to bring the plaintiff and defendants within its provisions, assuming that the plaintiff is one of the persons entitled to enforce the liability of the stockholders.

"It is claimed by the respondent that the plaintiff was a 'bookkeeper' and as such was not entitled to the remedy against the stockholders. The court below dismissed the complaint upon the ground that the statute does not include 'bookkeepers' and that therefore the plaintiff is not entitled to its benefits. The question we are to determine, therefore, is, Should the statute be construed so as to include plaintiff, who was a bookkeeper? Section 57, above mentioned, provides as follows:

"Liability of stockholders to laborers, servants or employes. The stockholders of every stock corporation shall jointly and severally be personally liable for all debts due and owing to any of its laborers, servants or employes other than contractors for services performed by them for such corporation. . . .'

"This statute in express terms includes all employes other than contractors, and inasmuch as a bookkeeper is concededly an employe, not a contractor, and would seemingly come directly within the terms and beneficial intention of the statute, the court has no hesitation in stating that in its opinion the plaintiff is plainly within the purview of the statute and entitled to recover. The words used in the statute are 'laborers, servants or employes.' The word 'wages' is not used. The word 'employe' as used in the statute is corelated to the words 'debts due and owing for services performed.'

"The words 'or employes' must be given a rational interpretation to be determined from the context of the whole statute and the general policy which it may reasonably be assumed prompted the Legislature to pass the act. The word 'employe' is of larger meaning than the words 'laborer and servant' which precede it, and it must be given some application, and should be neither rejected nor made meaningless. It should be given a meaning in accordance with its obvious import.

"The statute should be interpreted in accordance with the common understanding of the terms used. In Palmer v. Van Santvoord (153 N. Y., 612) the Court of Appeals intimated that within all the canons of statutory construction and interpretation 'bookkeeper' was included in the terms 'employes, operatives and laborers' as used in chapter 376. Laws 1885, a similar statute to the one under consideration. In the Matter of Stryker (158 N. Y., 526) the same court took a contrary view in construing the same statute and held that the word 'employe' as used in the said chapter 376, Laws 1885, was limited by the use of the word 'wages' in connection therewith, and that the term 'employe' as used in that statute did not include bookkeepers or persons whose remuneration is generally expressed by the use of the word 'salary.'

"The court interpreted the word 'wages' as it is used in 'common parlance,' and hence as 'wages' only are preferred under the statute, applying the common meaning to the term 'wages' it indicates that the statute was meant to apply to those performing manual or mental labor as distinguished from those working for salary. Applying the same rule of interpretation to the words used in section 57 above referred to, and giving to them the meaning generally ap-

plied to them in 'common parlance,' it is quite patent that instead of being an authority against it is in favor of the interpretation of the statute that the word 'employe' was mean to include a simple bookkeeper working for a salary, who was at all times a subordinate and under the direction and control of the corporation.

"The case of Bristor v. Smith (158 N. Y., 157), cited by respondent, is in no manner contrary to the views herein expressed. The plaintiff in that case was a lawyer who was paid \$50 a week, but who was not employed exclusively by the corporation. He did business independently on his own account.

"The court is of the opinion that a fair, honest and sensible construction of the statute, one that is fairly within the legislative intent and consonant with the general meaning and understanding of the terms used and with the beneficial purpose intended, leads to a reversal of the judgment.

"Judgment should be reversed and a new trial ordered, with costs to the appellant to abide the event."

#### California Dealers Form State Body.

Having tasted the value of organization in associations in San Francisco, Los Angeles, Sacramento, Fresno and several other towns, the dealers of California have formed the Motor Car Dealers' Association of California; the organization was perfected in Fresno, where the Fresno Automobile Dealers' Association was the host of the visiting tradesmen.

The officers elected were: President, G. S. Waterman, vice-president of the Fresno association; vice-president, Captain H. D. Ryus, president of the Los Angeles Automobile Dealers' Association; vice-president, C. N. Weaver, of San Francisco; secretary, N. R. Cooper, of Fresno; treasurer, E. A. Meister, of Sacramento; traffic manager, W. W. Brackett. As the last named title indicates, one of the objects of the organization is to secure better freight rates. Other subjects to be taken up are legislation, used cars, guarantees, cooperative associations and price-cutting.

#### Killingly Now a Goodyear Property.

As the final step in the reorganization of the Killingly Mfg. Co., of Providence, R. I., and the passing of its control to the Goodyear Tire & Rubber Co., of Akron, \$125,000 first mortgage 5 per cent. bonds were cancelled last week; the company manufactures tire fabrics. Formerly it was controlled by Providence interests.



# **GETTING THE "TEAM" SPIRIT**

Coordination of Members of an Organization Not Accidental—Results That May Accrue from Developing Efficient Team-Work.

Team-work—two or more pulling the wagon of business in places where the extra pull is needed—that is one of the chief wants of present-day merchandising. Another word is organization.

Team-work does not "just happen." It is fostered. It is developed. It is intelligently cultivated. It teaches men that the sales organization and the factory organization is like a baseball nine or a football eleven. Every man is of importance in his special position, but personal glory and personal feelings must be subservient to the good of the team.

#### Trivial Differences Must be Buried.

The pitcher may not care personally for the catcher, but when there is a man at bat their common object is to prevent him from scoring. Both work to the limit to accomplish their object, and personal differences are entirely eliminated for the sake of winning the game. It is the team's success that is at stake. Trivial or even serious personal differences must not be allowed to spoil the showing of the team.

It is exactly the same with the team at bat. They must work together. One man must sacrifice to help the team. The others appreciate what he is doing.

Team-work spirit is the right spirit. It is the spirit of this age of organization. It starts with the captain, who shows that he cares for and is proud of his team, and it works and grows in the team as regard and appreciation of the leader grow, until it comes back to the captain and binds the team together in sort of a friendly circle. It is a great thing in business. With the team-spirit

men can accomplish everything. But if the leader fails, shows favoritism, cowardice, unfairness, or any of the faults that prove he is not a real leader but only a weakling, the team spirit languishes, then dies. It is a costly thing when a leader of a team proves untrue. It were better far that he fell sick. Then his men would rise to the occasion and fight for him tooth and nail.

## Captain Ever in Eyes of His Men.

It is a great thing to be a captain and it is a wonderful thing to have the unswerving loyalty of a number of intelligent men. It means a job pregnant with big possibilities for failure or success. And the captain must never forget that the men are watching him—watching him with loyalty and with pride, never for a moment doubting that their captain will prove equal to every occasion and prove always a sincere and true man.

Are you developing the team-work spirit in your business? If not, try it. But don't try it unless you believe in it all the way. There is already too much team-work that is all talk.

# "HOW'S YOUR CAR?" A QUESTION FRAUGHT WITH REAL MEANING

"How's your car?" In that simple question the live salesman shows a form of interest in a customer that is practical, sympathetic and of the highest importance in the development and building of a permanent business.

With too many salesmen the keen interest that was present before and up until the sale was consummated disappears when the customer drives away in his car.

But the salesman who calls around every once in a while and in a friendly, interested way says "How's your car?" proves that he is trying to deliver satisfaction. Nine cases out of ten, if your car is honestly built and honestly sold he will tell you it is all right. And he may give you the name of a friend who is thinking of buying.

The tenth man may have a kick Good! Let him get it out of his system. Arrange to have him pleased and satisfied if it is a possible thing. He will be all the happier for your call and will be one of your best boosters if you help solve his troubles. Get the habit. Ask the next customer you meet "How's your car?"

# MAKING YEAR'S SHORTEST MONTH BIG FOR BUSINESS

Are you getting your share of the winter business? If not, why not?

An Eastern dealer who sells Buicks sold and delivered more cars in one week in December than he had in the entire month of December, 1912. If he had listened to conversation that he heard about the dullness of the stock and bond market he would have sold nothing.

He heard the conversation, of course. But he paid no attention to it except to see that everybody in his employ worked harder than ever. He worked harder himself. He found that though people were indifferent to stock and bond investments they were ready to buy cars. He could not account for it and did not attempt to account for it; he simply pushed business as hard as he knew how. When his men found they could actually sell cars and deliver them in spite of all the talk, they got on their toes and the result was a record month.

Your next chance for a record is February. There will be only 23 working days. What are you going to do with them? Start now to plan for them. Don't plan too small and don't plan too big. But plan something and carry it through. You can do it if you plan right. Get your whole force imbued with the idea that this February can be made big—and start after the business right now.

# **COURAGE AS A SALES MAKER**

"Head up and Shoulders Back" the Attitude That Helps One Win—The Salesman Who "Called Buyer's "Bluff" and Got an Order.

Courage—More courage, more of that fearlessness which marks real men on the battlefield, is needed in business.

"Tisn't life that matters. 'Tis the courage you bring to it," says old Frosted Moses in Hugh Walpole's "Fortitude," and the man who is selling goods of any kind realizes in the quiet hours that follow success or failure that it was his courage or the lack of it that made him win or fail. Courage to say the right thing—and say it straight and plain at the right moment—that is what marks the successful salesman.

If you let your stomach sag and your shoulders droop and your chin drop the other fellow is going to beat you. He is going to turn you down and send you away. It is a contest of mind against mind, will against will. How can you win if you are beaten at the start? Keep your shoulders up; take a deep breath and get your feet on solid ground and your stomach will feel all right; then hold your head erect and chin in and fear nothing.

# How the Salesman "Stopped" the Buyer.

Your proposition must be good or you would not be selling it. Why should you fear? Expect success, but do not fear defeat. It is all in the day's work.

One of the biggest orders ever landed by a parts maker came directly as a result of the courage of their salesman. When he entered the office of the purchasing agent he was greeted by a nod and a curt "Sit down!" The purchasing agent continued to dig in his desk drawer for some imaginary paper and without turning or lifting his head said to the salesman, "Go ahead!" The salesman wanted that man's whole attention. If he got it he had a chance. If not, there was little use.

He sat there without uttering a word. "Fire away!" said the purchasing agent.

"I will wait till you get through fooling with those papers," said the salesman. "I have a story that demands your entire attention while I am telling it. I will be brief and swift as I can. If this is not a convenient time I will call again. It will take me about ten minutes to give you my facts; if you are going to hear them now you will have to sit right up and pay close attention. I have heard all about your stunt of fooling with papers to rattle the salesman, and you can't do it with me."

#### Success Even Greater Than Expected.

For years that purchasing agent had pulled his little stunt, and in the majority of cases it had worked. This time he sat right up and he listened like a little boy who had been caught in the act.

"Now," said this salesman, who feared nobody, "I would like to put my facts before your engineers; I don't want to go over your head, and I want you to arrange an appointment for me with them, if you will."

The purchasing agent sent right out for the engineer, and when he came in gave him the friendliest kind of an introduction to the salesman. To make a long story short, the salesman's courage in calling his bluff made a friend of that purchasing agent and won his respect. It needed only the engineer's approval of his goods to land an exceptional order.

# STRENGTHENING THE CONFIDENCE OF THE SUB-DEALER

One of the principles laid down by a very successful director of advertising is that it is far more important to keep your old customers sold than to get new ones. This applies to dealer work, of course. It suggests that there are possibly lines of work on dealers by distributors and factories that are still unexplored. As a large dealer, what are you doing to keep your sub-dealers sold and satisfied? How often does your name and your proposition come before them? What are you doing to build and strengthen confidence?

# THE DIRTY WINDOW AS AN INDICATOR OF BUSINESS

Are you keeping your windows clean? This is the season of the year when the temptation comes strong to "let 'em slide." But you know when you inwardly say that as you step in the door, that it is the wrong thing to do.

Dirty, smoky windows are not a bit better than a dirty face, a dirty collar, frowsly hair. "Just as likely as not the man who lets his windows go unwashed will spit tobacco juice in the corner of his office and trust to the poor light not showing it up; I never would expect to get decent service from a fellow who does not look after his one best bet any closer than this man does," remarked a keen shoe manufacturer as he tried to peer through the windows of a hig automobile store in a city not a hundred miles from Chicago.

That was six months ago. The automobile dealer whose windows elicited the remark is out of business today. The same shiftlessness that was evidenced by his dirty windows ran through his entire establishment. He had the men and he had the money, but he did not look after things and he did not charge anyone else with that responsibility.

It does not cost much to have clean windows. They are always on view and always making impressions for you. Are they impressions of the right sort? The answer is important.

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# SALESMAN OF TODAY SAME AS HE WAS 50 YEARS AGO

Basic Requirements Unaltered, Says
Man Who Sold Goods for 58
Years—Drops Hints for
"the Younger Man."

Fifty-eight years a salesman! This is the record of George A. Olney, of Brooklyn, N. Y., and after traveling around the country for more than half a century making buyers believe his goods were worth buying his opinions on selling and salesmen ought to contain a germ of thought for the man who has not seen the service that attaches to Olney's record.

He is 79 years of age, but far from inactive. He has retired, however, and in these days of reminiscence recently told the New York Times the story of his years on the road. He was asked, among other things, if the salesman of a half century ago differed from the salesman of today, and he stated without hesitation that the man who would have made a good salesman fifty years ago will make one today.

"The basic requirements are the same," he said. "The good salesman now, as then, must be a man of tact, energy, progressiveness, enthusiasm as to his goods, and he must be first, last, and all the time a gentlemen. The great weakness with many traveling men is that they lack the tact, the perception which enables them to approach a possible customer properly.

"The great change on the road is that the salesman does not have to be so much of a drinking and social man as used to be necessary. There is far less drinking among traveling men than there used to be. The nature of the business used to require a drummer to wine a buyer, and dine him, and take him to the theater. The great thing in years gone by was entertainment.

"Now things are on much more of a business basis, and the change is due to the rush of competition. Nowadays the man is going to get the business who has the best goods, the best prices, and can present his goods in the best way to the attention of the buyer. It is still important for the salesman to impress his individuality upon the men with whom he is brought in contact, so that they will have a definite remembrance of him in their minds and will know him when he calls again and associate him with a certain house.

"Many traveling men make the mistake of not forcing themselves to be remembered, and one hears merchants say things like this: 'There was a young fellow in here from So-and-So's with a nice line of goods; no, I don't remember his name.' Of course, my own experience has been different from that of the majority of traveling men, because I have stuck to the same line all the way through, and many salesmen chop and change around from one business to an-

"There is one thing that I am always trying to drive into the heads of young traveling men who expect to stay in the business. It is a lesson derived from my own long experience and I have myself found the value of this lesson thousands of times.

other. They are like the rolling stone

and usually get the same results.

"This is: Make a friend of every boy in the houses with which you do business. The office boy of today, to whom some salesmen do not think it worth while to pay the slightest attention is the junior partner, the buyer, the president of tomorrow. As short a time as ten years makes a great difference in the standing of lots of the lads. They open the door for you today as underlings and close it in your face tomorrow as masters.

"One of the chief things to which I ascribe such success as I have had as a traveling man I lay to this rule—make friends of the boys. So many, many times I have seen the old heads, the old bosses, die and the kids come right up. I was a friend of them when they were kids, and they are my friends when they sit at the rolltop desks. You can never tell in this world who's going to count. The person you think insignificant today may think you insignificant next month."

## Elgin Dealers Form an Association.

The holding of an automobile show March 5, 6 and 7 was the chief object of the dealers in Elgin, Ill., when they recently formed the Elgin Automobile Dealers' Association. The show will be held in the Coliseum under the management of Otis W. Hoyt. The officers of the association are: President, George S. Adams; vice-president, Chester Mc-Gill; secretary, William Tidmarsh; treasurer, Charles Moody; directors, the officers and David McBride.

The General Motors Truck Co., of Detroit, has established a branch in Newark, N. J., at 123 Washington street; it is subsidiary to the New York branch and is in charge of A. J. Marshall.

# THREE BUILDINGS HOUSE ROCHESTER DEALERS' SHOW

Crowd Gathers Early Despite Sleet
Storm and is Admitted Early—
Pleasure Cars and Trucks
Staged Together.

Adverse weather conditions may have the effect of at least partly spoiling some automobile shows, but not so the display that was uncovered by the Rochester (N. Y.) Automobile Dealers' Association in three buildings in Exposition Park on Saturday night, 24th inst. In fact, bad weather actually caused the show to be opened two hours earlier than schedule, for those who had it in hand simply could not let wouldbe spectators shiver in the driving sleet that beat about the buildings. So the doors were opened at six o'clock instead of eight o'clock. The show will hold the boards for just one week.

Nothing elaborate has been attempted in the way of decorations, though there is enough to hide the bareness of the walls and ceilings. Thus, for instance, in one building there are streamers of tan and turquoise blue, in another the streamers are blue, in another the streamers are green, and in the third they are magenta and yellow and, of course, there is an almost unlimited variety of colored lamps. Among those who are exhibiting are the following:

F. R. Luescher, Inc., Jeffery; Alling & Miles, Hudson; C. L. Whiting, Buick; Curtis-Pembroke Co., Winton; Empire State General Vehicle Co., Locomobile; Frank P. Hunt, Velie pleasure and commercial; F. Porschet, Apperson; G. W. Henner; Metz; Willys-Overland Co., Overland; Paul Le Hardy, Marmon; Geo. H. Barker, Case; Mitchell-Lewis Motor Co., Mitchell; Electric Car Sales & Service Co., Broc electrics; Franklin Motor Car Co., Franklin; Robert Shafer-Pierce - Arrow; Thompson. Decker Co., Cole pleasure and Kelly Co. commercial; Strong-Crittendon Chandler; McKenny & Gilpin, Oakland; Almy Auto Co., Pilot; Breunig & Foote, Paterson; E. W. Fisher, Stearns-Knight; Mandery Motor Car Co., Packard pleasure and commercial; Thos. J. Northway, Ford; Genesee Motor Vehicle Co., Wahl; G. W. Henner, International commercial; Overland Rochester Co., Willys commercial and Willys-Knight pleasure; Auto Commercial Co., Horner commercials; F. Porschet. Indiana commercials; C. E. & H. B. Clark Auto Co.. Palmer-Moore commercial.

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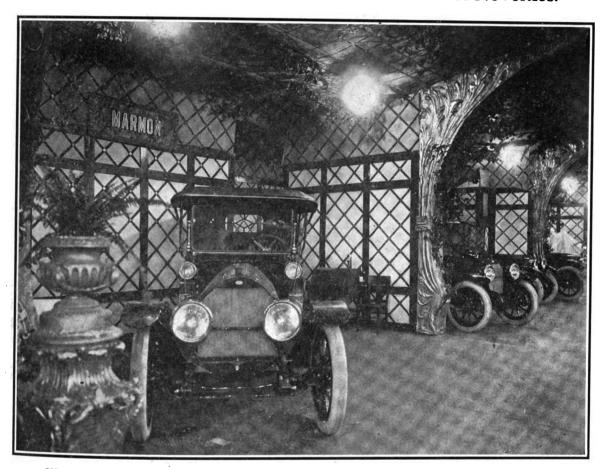
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# CHICAGO SHOW STILL A STRIKING SPECTACLE

Decorative Treatment Compares With That of Former Years—More Cars
Than Were Listed Appear in the "Conservatories," Including
Lowest Priced "Six"—Accessories Include Several Novelties.



SIDE SECTION OF THE COLISEUM "CO SERVATORY," PART OF MARMON EXHIBIT IN FOREGROUND

Yes, this year's Chicago show is less spectacular than those of other years. But say it quickly else you forget it, or, having said it slowly, may be as slow to believe it.

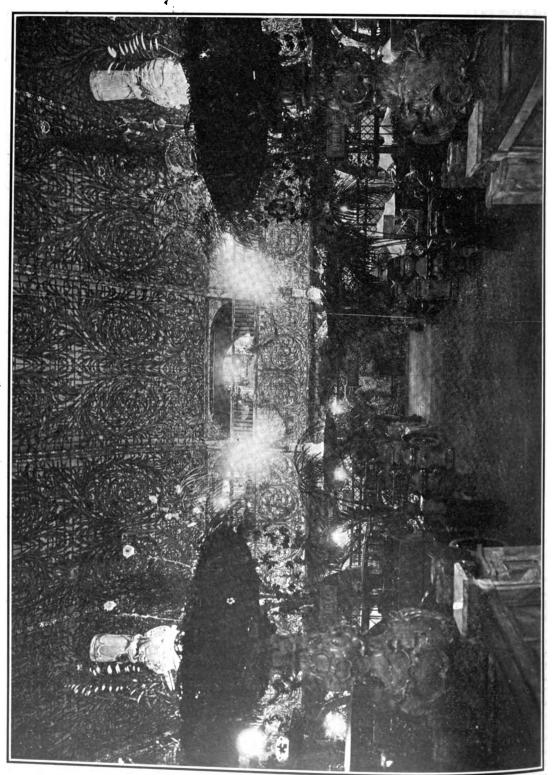
Of course, "good old" Sam Miles said in advance that this year's decorations would not be quite so lavish as those of previous years, and Miles has promoted and dressed and managed shows for so many years that he is generally considered an unusually capable judge. Even the colored drawings which he displayed when questions were asked seemed to bear him out, but, for all of that, this year's show leaves no corner of the eye unfiled. If less lavish, it is still very much of a spectacle; if there are no mirrors, no garden walls or mosaic designs

and less of staff and plaster of paris than usual, there is enough to fill the void.

As everyone who read Motor World knows, or ought to know, the show is laid out in a conservatory, so to speak. For the occasion, the Coliseum has been transformed into one of those places in which roses, violets and other flowers are wont to bloom and, truth to tell, the transformation is well done. The shape of the building lends itself to the design and though there is a great mass of heroic scroll work and other curleycues depicted upon the upper "panes" of the conservatory which are never seen in the violet hothouse, little things like that have never served to bother the men who draw the designs for Samuel.

The conservatory effect begins on the ground floor where, beneath the projecting overhang of the gallery, the exhibitors' spaces are separated by painted "panes" of "glass," each supporting beam being concealed by bronze staff of fanciful design, at the base of which vines bearing red blossoms have "taken root" and trail upward, clinging to the sides of the gallery and to the painted false work thereon. The gallery itself has been made much wider for the occasion. The painted "glass" has been so carried that it forms a canopy over the exhibitors at both ends of the gallery, a conceit which adds immensely to the general design. The rounded roof of the Coliseum itself is, of course, wholly concealed by the "panes." the gigantic





#### MOTOR WORLD

scrolls reaching from the gallery high up toward the roof.

In addition to touring cars and roadsters, and limousines, and sedans, madein-Austria poplars have been "planted" on the main floor, the tall, slender trees wholly overtopping the scene. There are two rows of these poplars, each tree alternating with a vase carried high on four slender white columns. Marking the center aisle of the hall there are four huge bronze plaster of paris vases, overflowing with flowers, and in the cup of each big vase is a much smaller and transparent vase through which the electric lights softly shine. At each separate exhibit there is a fern or palm, lending to the scene more of hothouse greenery than words or pictures can well make plain.

## How Things Looked in the Annex.

It is all very eye-pleasing and harmonious, and it has been a matter of common remark that it is the first time the decorative theme is not one which wholly overshadows the cars which form the reason for its being.

In the Annex, which directly adjoins the Coliseum proper, the dressing runs more to fanciful scrolls and less to conservatory effect. In fact, there is nothing suggestive of a hothouse about it and, whereas the scroll work in the main building is of brown the Annex scrolls, which cover the upper half of the walls, are of burning reds, somehow blending with softer blues. Upstairs the Annex is practically unadorned, save for the exhibitors' signposts and the globes thereon.

# Painted "Glass" and Water Lilies.

Advance information stated that the First Regiment Armory, in which the other half of the show is always housed and which is separated from the Coliseum by "Pneumonia Alley," would also be transformed into a conservatory, but it requires a mighty rubbing of eyes and a mightier straining of the imagination to see more than a gleam of a hothouse in the structure where the soldier boys are wont to parade, or prance, or dance. The chief suggestion of a conservatory is contained in a simulation of painted "glass"—also those scrolls—which hides the light well overhead. There are likewise a few of the poplar trees and a few of the huge bronze vases, up which several anemic vines make a feeble effort to climb far overhead but fall short of it. Oh, yes! There are water lilies there, too. They are painted on panels which cover the gallery rail, the lilies appearing to surround rather than float upon a

lily pond. The hanging flower baskets suspended from the roof, without which few armory displays would be complete, are still in place, and the walls are covered with the green paper paneled in dark woodwork, which also is reminiscent of shows that have gone before.

But with or without spectacular dressing, it is a brave show and a fine one, although in point of number of exhibitors not quite so large as the shows of yesteryear. The exhibits are spread over

CENSUS OF THE SHOW Total Exhibitors	289
GASOLENE CARS Two Cylinders Four Cylinders Four Cylinders (sleeve valve) Six Cylinders Six Cylinders (sleeve valve) Six Cylinders (rotary valve)	6 121 6 100 2 1
Total Gasolene Pleasure Cars         Cars           Touring Cars         139           Roadsters         42           Limousines         11           Berlines         6           Coupes*         15           Landaulets         1           Sedans         8           Cabriolets         2           Cyclecars         12	236
Air Cooled Cars 11 Water Cooled Cars 225	
	236
CHASSIS	- 1
Four Cylinders         13           Six Cylinders         17           Electric         3	
· · · ·	33
ELECTRIC CARS	33
_	
Coupes         2           Runabouts         2           Broughams         27           Limousines         2	
	33
Grand Total all Cars and Chassis * Includes Convertibles.	302

so much more space that there are no blanks and no absentee is missed, not even the tire exhibitors, who, for the first time, are among the missing, as, with few notable exceptions, was the case at the New York show.

#### Smoked Out the Cyclecar Press Agent.

There are, however, more exhibitors than first were listed, for, though it was not the intention to utilize the Wilson Building, in which last year's overflow was housed, the astute Miles rose to the occasion when the automobile firm, which since has leased it, sought to turn an honest penny by promoting a cyclecar show therein and trade on the attend-

ance and reputation of the automobile exhibition itself. At the bottom of the cyclecar show Miles found one of the press agents who has been the mainspring of the so-called cyclecar movement. He also found that only one cyclecar maker had contracted for space. Miles, nevertheless, promptly leased the whole Wilson Building and turned it over to some of the late comers and moved out of the basement several of the car exhibitors, who found the change of location uncommonly grateful. The press agent's cyclecar show, therefore, failed to occur.

#### Good Business With the Buyers.

The doors of the buildings were thrown open promptly at two o'clock Saturday afternoon last, 24th inst., and by the time the street lights of Chicago were aglow the Coliseum was filled almost to suffocation—but, somehow, the crowd never is quite so large in the Armory. Each night has seen a repetition of this condition, and there is no more visible evidence that Western folk have tired of automobile shows than was apparent at the New York function.

Chicago always has been a good buyers' show and at last accounts there was no reason to believe that the 1914 exposition will be behind its predecessors in this regard. From all over the West dealers have attended in numbers, and though most of them "signed up" long ago there seems enough of them who have not done so to make the affair worth while, quite apart from the stimulating properties which it possesses.

The difference in the New York crowds and the Chicago crowds always is plainly discernible and it is quite as plain as ever. In one respect, however, the Chicago show-goers on this occasion have supplied a surprse. In New York, the cyclecars and the diminutive automobiles were always so thickly surrounded that it was difficult to get a view of the little vehicles. In the West, where it was supposed they would prove much more popular, the crowds that have gathered have not been so large or apparently so interested or curious, whatever the case may be. As crowdgatherers, however, nothing begins to compare with the lecturers at the Rambler and Cadillac booths. These human phonographs not only draw the spectators but hold them in amazing fashion.

#### Those Not Seen in New York.

Wherever there is action there is attention, but these two exhibits prove how great is the power of the human voice. There are several moving exhibits nearby, to say nothing of the impressive demonstrations of the Vulcan electric gear shifter at the Haynes display, but none of them draw the spectators and hold their attention as do the Jeffery and Cadillac lecturers.

In the accessory department, demonstrations are more generally the order of the day than ever before. As usual, magnetos are spitting sparks, shock absorbers are bounding and rebounding in many parts of the several buildings, spark plug pumps are shown in operation, one-man tops are being raised and lowered in almost the twinkling of an eye, and at one exhibit a fountain is constantly playing on a waterproot top.

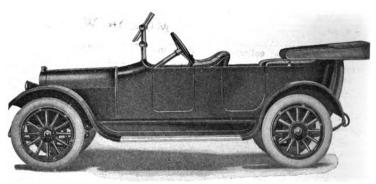
All these and others of the sort indicate the changing character of the national shows. For while orders of one size or another are still being booked, the exhibitions each year are becoming more and more opportunities for demonstrations and exploitation rather than opportunities for the convenient transaction of business.

#### Score of Cars "First Time Out."

As wonderful as is the show insofar as decorations are concerned, it is not even a little disappointing to those who visit it in search of just plain newness, and it bears the distinction of uncovering what is really the lowest priced "six" on the market—the Herff-Brooks which sells for \$1,375.

The baker's dozen cars that did not appear in the New York show, having been "saved up" for the West, so to speak, grew over night, almost, to a total of 20, the list including just 13 gasolene cars and seven electrics that make their first appearance of the year.

Of course, all the well-known names that appeared in the Grand Central Palace show—or, rather, nearly all of them, for there are a few that are missing—loom on the decorative signs that help make the Coliseum and the Armory beau-



NEWEST WESTCOTT "FOUR" IN WHICH STREAMLINE EFFECT IS PRONOUNCED

tiful to look upon and interesting to walk through.

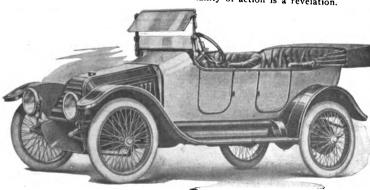
Directly at the entrance to the Coliseum and to the left of the broad central aisle there are the Franklins with their gracefully sloped hoods and their glossy sides and, needless to point out, they are the only full-sized air-cooled cars at the show. On the other side of the aisle there are the Krits and a little further down, the Reos, both exhibits that never fail to attract attention quite as much for the appearance of the cars they hold as for their moderate prices.

To the left of the Franklins there are the Wintons, and across the aisle from these pioneer "sixes" crowds quite naturally gravitate into the Haynes space, where a tireless salesman and a working model of the Vulcan electric gearshift, with which all Haynes cars are equipped, make plain the genuine simplicity of the apparatus. Incidentally, for those who may not know it, the first downward movement of the clutch pedal of cars that are Vulcan equipped, moves the driving gears into the neutral position by a positive mechanical movement through interconnection with the pedal; no electricity is used for the movement; the electrical part of the device merely shifts the gears into engagement and the certainty of action is a revelation

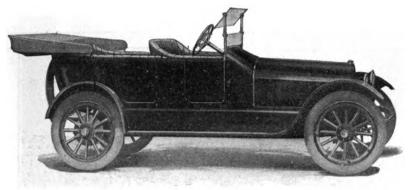
But the Haynes exhibit is not the only one that holds a more than ordinarily convincing demonstrating model. For instance, the crowds that gazed in wonder at the simplicity of the Cartercar chassis at the New York exhibit-probably because of its simplicity-were, and are, quite as thick around the Cartercar stand: and the same can be said for the Premier exhibit, with its silently moving Weidely motor which made such a hit at the Palace. All told, there are probably fewer "moving" exhibits at the show than at any previous show, though it is certain that those that do appear are not anywhere nearly as noisy as their predecessors. The Chalmers engine which last year chugged itself into movement under the not too gentle persuasion of compressed air, for instance, is missing, and in its place there is another that is just as positively "turned over" by electricity and without a sound to indicate the movement. The Cole exhibit, too, is marked by a slow-turning "six" motor which runs and runs from morning to night.

#### Exhibits That Were Transplanted.

As far as body styles are concerned, the Chicago show is, as it always has been, and probably always will be, practically a duplicatation of the New York function, though none of the cars has lost its appeal for having been seen there before. The Peerless sedan, which probably is the acme of luxuriousness. shows no signs of the long journey it must have made to occupy the prominent place it does; and at the Locomobile exhibit there is slight chance of the wonder that grew upon those who visited the "Loke" exhibit on two succeeding days in New York; for both the green and the tan cars are there together instead of being shown alternately, and, be it added, they are about the only ones at the show in which the upholstery is plain and smooth and flat. It is true that the elegantly appointed berline limousine



R. C. HUPP'S \$1,000 MONARCH SHOWING RADIATOR CONCEALMENT



LOWEST PRICED "SIX"-HERFF-BROOKS, WHICH SELLS FOR \$1,375

that graced the New York Locomobile exhibit is missing, but its place is taken by a standard limousine which probably is a great deal more appealing to the motoring public in general.

Brightly colored cars are as conspicuous by their absence as was the case at the New York show, though nearly all of the red and the vellow and the blue and the white cars that stopped the gaze at the Palace are there in all their glory. That red Fiat roadster, for instance, which everyone stopped to look at and then to touch, under the baleful eve of the "coon" porter, looks exactly as it did in New York, and beside it there is another red Fiat-a truly beautiful example of limousine work. The Loziers, of course, are yellow; that is, most of them are; and there is a blue Cole and a White Velie, not to mention the gold Waverley electric that has one of its sides cut away.

#### Half a Dozen of New "Sixes."

Among the comparatively few exhibits that have been made more complete since their New York appearance, the National never fails to draw a crowd, for it holds a chassis that was not displayed at the previous show. The chassis, of course, is the new "six" and it goes far to make plain the simplicity for which National engineers evidently have striven-and have obtained. There is not a nut or a bolt or a rod or a wire that is not absolutely necessary and that has not a definite function to perform, and many of them perform several functions. One of the things the chassis serves to emphasize is the extreme flexibility of the new cantilever springs upon which it is supported. It requires scarcely any effort at all to press down the chassis. Another clever "stunt" that has nothing whatever to do with the mechanical construction of the car, is the lettering of the name and the price-\$2,375-on the frame where it cannot fail to be seen.

Of the 13 gasolene- propelled cars that

make their first appearance of the year, four came absolutely unheralded to the show, and of these four, one-the Herff-Brooks-is a brand new one; the other three are the Ford-which is a Ford, and nothing more need be said about it. for everyone knows a Ford; the Monarch, which is R. C. Hupp's \$1,000 car, and the Paterson, which, though fairly well known in the West is not so well known to Eastern motorists and dealers. The remainder of the list of "new" exhibits includes the Lambert, which, with the Cartercar and the Metz and not counting the cyclecars, forms the friction-drive contingent; the Crow, the Lexington and the Howard, the McFarlan, which is the only car at the show with the Gray pneumatic gear-shifting system; the Pilot and the Westcott, the latter having but recently taken unto itself a smaller brother which is new throughout. And in the cyclecar class there is the Coey and the Mercury and the Rex.

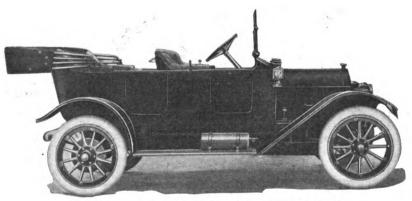
Among all these new cars—the fullsized ones, that is—there are an even half dozen "sixes," though the similarity ends right there; the difference between the six makes, in fact, is perhaps slightly more marked than might have been expected, for in the motors alone there is very nearly every variety of casting, from the single L-head cylinders in the Hersf-Brooks to the block T-head casting in the Westcott; between these two there is the Crow, which has its L-head cylinders in a block, and the Howard, which has its cylinders in threes.

Also, there is very nearly as much variety in cylinder dimensions, the smallest of them all being the Herff-Brooks which has cylinders measuring 4 x 4½ inches; of the others, the Westcott, the Pilot and the McFarlan all have 4 x 6 cylinders, the Howard cylinders measure 4½ x 5½ and the Crow 3½ < 5½ inches.

#### Light "Six" for Little Money.

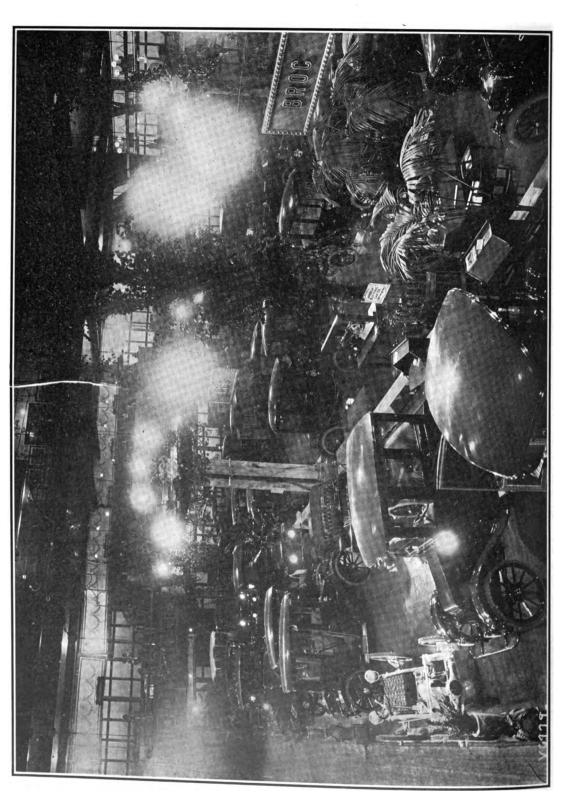
With the exception of the Herff-Brooks, which, as has been pointed out. is new all the way through -it has a four-cylinder brother, by the way, which differs from it only in the size of its parts -all of these cars are practically continuations of older models which have demonstrated their worth and given evidence of little room for improvement. Both of the Herff-Brooks models are capable-appearing creations with the semi-streamline bodies that fashion and the reduction of wind resistance has decreed and represent rather more car for the price than one would naturally expect. The "six," for instance, which sells completely equipped even to an electric lighting and engine starting system at the comparatively low price of \$1,375, has a wheelbase of 124 inches and the body is wide and roomy. The "four" is only slightly smaller-its list price has been set at \$1,100, including full equipment, of course-the wheelbase being 116 inches. Both have leather-faced cone clutches, three-speed selective gearsets and threequarter floating rear axles. The car, by the way, is no relation whatsoever to the Marathon, for which the Herff-Brooks corporation acts as factory distributer.

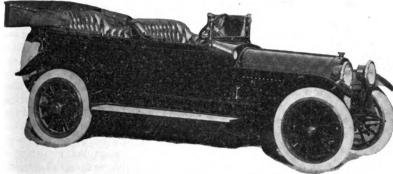
The Marathon cars—all of them are "fours"—scarcely have changed at all since last they were exhibited; a cowl dashboard has been added, full electric



SIDE VIEW OF FOUR-CYLINDER CROW TOURING MODEL







HOWARD "SIX" TOURING MODEL WHICH SELLS FOR \$2,375 EQUIPPED

equipment now finds a place upon them and the upholstery has been made to conform to the designation "Turkish," and that is about all. There are three Marathon models, listing at \$1,495, \$1,325 and \$1,095, and having motors measuring  $4\frac{1}{2} \times 5\frac{1}{6}$  inches,  $4\frac{1}{2} \times 4\frac{1}{2}$  inches and  $3\frac{1}{2} \times 4\frac{1}{2}$  inches, respectively.

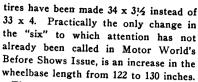
As for the other "sixes"—the Westcott, the Howard, the Pilot, the Crow and the McFarlan—the McFarlan probably incorporates the surest note of newness, i. e., the Gray pneumatic system of engine starting and gear shifting, though all of the others exhibit the refining hand of the designer in a greater or lesser degree.

## Shifting Gears by Air Pressure.

There is little necessity for describing in detail the construction or the operation of the Gray pneumatic gearshift, for all that is fairly well known. Suffice it to say that pressure upon a foot button starts the motor by compressed air which has been previously stored in a tank; after the motor has started, the desired gear is selected with a hand lever, when subsequent depression of the clutch pedal automatically engages the gear. For the edification of those who care to look, there is the complete system upon a stripped chassis, and the number of times the engine has been started and the gears shifted must have severely taxed the

compressor located out of sight under the floor. As for the rest of the McFarlan car, the principal change is embraced in the addition of four inches to the wheelbase length, which now is 128 inches, and the substitution of trunnions instead of plain bolts for the radiator support. This one model, by the way, is the only one

The Crow exhibit holds somewhat of a novelty, spring wheels, produced by the Ideal Steel Wheel Co., appearing on a rakish-looking roadster; however, the wheels, which are shod with the regulation pneumatic tires, are not regular equipment, but are listed in the equipment as optional. During the interim since last the Crow line was displayed to the public, a new four-cylinder model has been added to the line-a car with a 41/4 x 51/2 block-cast motor and incorporating scarcely anything that has not heretofore been a Crow characteristic. Hence, back through the car there is a disk clutch, a three-speed gearset and a three-quarter-floating rear axle; the wheelbase is 120 inches. At the same time a new motor has been substituted for the one formerly used in the smaller "four"; instead of having cylinders measuring 4 x 41/2 and cast in a block, it now has pair cast cylinders measuring 4 x 5. Also, electric equipment now is standard on all three models, including, as a matter of course, the single "six," which scarcely has been changed at all, and the



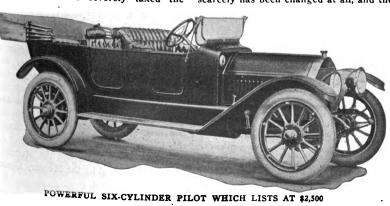
The two six-cylinder Pilot cars, which, by the way, are the only really big cars in the Coliseum basement exhibit, also incorporate more or less novelty in that they are both fitted with Westinghouse air springs; but as is the case with the Crow spring wheels, they are not standard equipment, belonging instead in the optional list. To those who are familiar with Pilot construction, there is not a great deal that is new and what there is scarcely is visible. The water jackets and the manifolds have been increased in size and a few other minor alterations made. As heretofore, the Pilot remains the only one in which interconnection between the steering wheels and the headlamps-or rather one of the headlamps-is provided. Incidentally, the Pilot people have let it be known that but for untoward circumstances they would have had a brand new model on view-a "six" in the "light six" class with cylinders measuring 4½ x 6 and listing at \$2,885; the car is to be ready. it is stated, in about two weeks time.

#### Just What the Doctor Ordered.

Of the two remaining "sixes" that make their initial appearance-the Howard and the Westcott-there is more of newness in the two new "fours" that accompany them, to give a somewhat Irish twist to the statement. The Howard scarcely has been changed at all, though it now has a double ignition system and a double exhaust with separate manifolds for each block of cylinders; the cone clutch with its dozen spring inserts, the triangular torque tube cushioned on heavy springs, the Warner-Toledo selective gearset and the fullfloating rear axle all remain as they have been in the past.

The new "four" which accompanies the Howard "six" is not a Howard but is a Lexington, though the seeming discrepancy in names is easily understandable to those who know that the Lexington-Howard Co. produces both, the former being the "six" of the line and the latter the "four." Though there are two Lexingtons on view—a touring car and a roadster—the roadster comes in for the greatest share of attention for it has been designed with a special purpose in view, and, according to the salesman in charge of the exhibit, under the direction of some 11,000-odd physicians.

The car is intended to represent the



ideal of the average doctor, for whose use it has been turned out. To this end, the sides have been made rather higher than is usual, to provide the maximum of protection, and the top can be buttoned closely to the windshield in a manner that virtually makes the car into a cosy coupe. Another of the distinctive features of the car is that it has adjustable seats. At the front of each there is an almost inconspicuous little hand-wheel, with the aid of which the angle of the seats can be varied to give either the stiff upright position that is supposed to indicate dignity or the luxurious lounge which speaks of sureness and the elimination of the little things that worry. But most of all, the seats provide for genuine comfort. In the constructional details of the car, the motor now has cylinders measuring 4 x 5, instead of 41/8 x 51/4, the smaller dimensions having been found amply sufficient for the comparatively light body and more in keeping with the economy that not a few doctors find it necessary to practice.

#### Big and Little "Sixes" and "Fours."

The new Westcott "four" is an excellent example of the notable tendency toward streamline principles and the reduction of wind resistance, for not only does the engine hood taper gently backwards to join the rather deep skuttle, but the body as well is tapered, the rear seat, in consequence, being unusually roomy. Both roadster and touring bodies are put upon the new chassis, which is the smallest of the line. For power there is a Northway motor with block cast cylinders measuring 31/2 x 5 inches, mounted at three points in the chassis. Further along there is a big, capable leather cone clutch transmitting power through a three-speed selective gearset, with the control levers in the center of the footboard; the steering wheel is at the left side. One of the individualities of the touring model is the method of fitting the gasolene tank filler cap between the front seats, where it is easily assessible without the necessity for lifting the cushions. Upholstery is deep and yielding and the equipment is complete down to the last item and includes electric lighting and starting, electric horn and portable lamp and all the other little fitments. As for the other Westcotts-the big "six" and the larger "four" -there has been scarcely a change made in them, except, of course, that they have new bodies in which angles and abruptness have been blended to give exterior smoothness.

Among the remaining three four-cylin-

der cars that go to make up the total of 13, the Monarch, which, as already has been pointed out—if it is not already well known—is R. C. Hupp's muchtalked-of \$1,000-car, undoubtedly attracted the most attention; for not only is the car an extremely attractive looking one for the price but it is absolutely different in appearance from any of the others in the show, with the possible exception of the Franklin, which it somewhat resembles by reason of its sloping, tapering hood.

#### Putting the Radiator Out of Sight.

Probably the most conspicuous feature of the car is the seeming absence of any radiator, despite the fact that the engine avowedly is cooled by water and not by air. In construction, the radiator is somewhat smaller than is usual, or so it seems, and the hood is so arranged that it completely hides it, nothing being visible except the usual radiator cap on the outside. Needless to add, the covering of this more or less delicate part, also serves to protect it. Water is circulated by thermo-siphonic action, the pump having been eliminated, along with a lot of other parts, be it added, as superfluous.

The motor in the Monarch is an exceptionally compact piece of machinery with its four cylinders cast in two blocks and its crankshaft hung in three bearings. The cylinder dimensions are 334 x 414 inches and the nominal rating is 25 iorsepower. Reflecting the modern design, the camshaft is driven by "silent" chain which is easily accessible by removing the forward cover. The carburetter is at the end of an exceptionally short intake pipe and the fuel tank is located in the skuttle; the mixture is magneto fired and lubrication is carried on by the pump over constant level splash system. Main bearings and the timing gear train are oiled under pressure.

#### Friction Drive Brought Up to Date.

The car is steered from the left side through an irreversible gear and an 18-inch hand wheel, and the gearshift lever is placed in the center; three speeds are provided by the gearset. The wheelbase is 110 inches and the chassis is supported in the rear on full-elliptic springs which are swiveled at the bottom and hung beneath the axle to lower the center of gravity. Tires are 32 x 3½ and the equipment, all of which goes with the car, includes windshield, top and curtains, electric lighting and engine starting system, wire wheels, Jones speedometer and so forth.

In the Lambert car, which is one of the three full-sized friction-driven cars in the show, the most conspicuous change that has been made, barring the few minor alterations set forth in Motor World's Before Shows Issue, is embraced in the substitution of a new fabric, rubber impregnated, friction filler for the paper filler that has been used in the past. The change, it is pointed out, provides for a slightly better coefficient of friction between the driving members and decreases the possibility of "flats" appearing and causing irregular running. Another change that has been made concerns the lighting system, which now includes but one head lamp, centrally placed on the radiator, instead of the two that heretofore have been used. Incidentally, the instruments that help the driver keep track of the hidden functions of the car now are placed on a cowlboard.

#### The Showing of the Cyclecars.

The single Paterson model that hereafter will bear the Paterson nameplate is exhibited in two forms-roadster and touring car-and the chassis is practically new all the way through; it takes the place of the two four-cylinder chassis • that have been built in the past. In the concrete, the Paterson may be viewed as a "two-unit" car. Which is to say the motor and gearset is one unit and the rear axle assembly the other. The motor cylinders measure 31/2 x 5 inches. Delco electric lighting, starting and ignition are standard equipment. From the motor, power is transmitted through a leather-faced cone clutch, which is completely enclosed, and a three-speed gearset with the control lever in the center. The wheelbase is 112 inches and the wheels are shod with demountable rims and 32 x 31/2-inch tires front and rear.

In the realm of the cyclecar, which little vehicle, by the way, draws not quite as much attention in Chicago as it did in New York, there are three newcomers, and, of course, there are all, or nearly all those that appeared in the Palace, though the exhibit in the Wilson Building comes very far from being a "cyclecar show." The Imp is there, for instance, four strong, and there is the Car Nation, and the Trumbull, and the La Vigne, these being in addition to the new ones, which are the Rex, made by the Rex Motor Co., of Detroit, Mich., the Coey, made by the Coey School of Motoring, in Chicago, and the Mercury, which is produced by the Mercury Cyclecar Co., of Detroit.

(Continued on page 33.)

# KNOWING WHEN TO BE FUNNY IN SALESROOM

# Jokes in the Wrong Place That Act as a Setback to Sales—Reilly Meets an Old Acquaintance Who Laughed Himself Off the Road to Success—Dignifying Goods by Treating Sale Seriously.

Reilly and the Sales Manager sat in the dealer's office and watched the snow sift down as if it meant business; big, white flakes drifted down individually and in groups, moving in that quiet, fascinating way which makes a man like to sit and just look out of the window by the hour.

a look at you, you two old kittens. How's biz? So-so, eh? Well, well! Now whaddye know about that? Glad to hear you're still doing business! Gets less hair every day, doesn't he?" The visitor slapped Reilly on the back, waved his hand playfully at the Sales Manager and started for the door.

for the door.

"GOOD BYE, BOYS, GOOD BYE," SAID THE BREAKFAST FOOD PEDDLER

The Sales Manager and Reilly were unusually quiet as they watched the snow blanket in its formation and even Nellie, who usually tried to look busy, left off pecking at the typewriter and contributed to the silence. The gust of cold air which crept in through the front door interrupted the reverie and both men gave mental jumps from their daydreams as an overcoated man kicked the snowballs off his heels on the threshold.

## The Genial Salesman Makes a Call.

"Well, hello-o-o, Billy!" sang out Reilly as the visitor entered the office and greeted both the erstwhile day-dreamers.

"Good thing you came in," said the Sales Manager. "You prevented two able-bodied men spending the rest of the afternoon star-gazing out of the window in broad daylight."

"Well! Well! 'S that so? Whaddye know about that?" and the newcomer bubbled genially. If his effusiveness and playful manner had been phosphorescent he would have been visible miles away on the darkest night.

"Haven't seen you fellows in a long time," he continued. "Seems good to get "What are you doing now?" called Reilly.

"Who? Me? Oh, I'm educating the

retreating down the street in the direction of a corner grocery. "Do you see him often?"

"Once in a while," replied Reilly. "He drops in whenever he's around this way, but I hadn't seen him before in nearly a year. He was handling underwear the last time I saw him."

The Sales Manager said nothing, but shook his head and smiled in a perplexed sort of way.

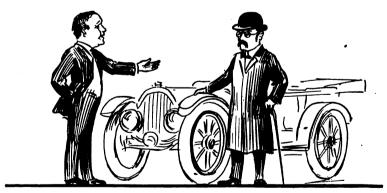
"Life is one grand joke to him," was Reilly's comment as he again took up his snow-gazing.

#### Wasn't Able to Get Down to Earth.

"How long was he with you people?" he asked the Sales Manager.

"How long? Oh—a year, I guess. Something like that. Not very long, anyway. Too bad he never clinches a job and makes good; I always liked Billy. Good fellow—good talker—good salesman, too, I guess, but he never seems to get on the way he should."

"If he only could get down to earth he would be a pretty fair sort of man, wouldn't he?"



"BILLY NEVER COULD TALK WITHOUT BRINGING IN THAT FUNNY STUFF"

public up to a new brand of sawdust! The only breakfast food that doesn't contain chips! Sawdust of the finest quality! Can I interest you?"

"Good night!" said Reilly.

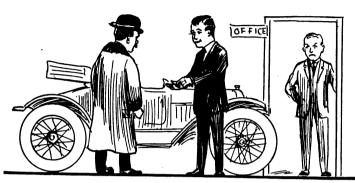
"Good bye, boys, good bye!" and the breakfast food peddler was out of the door and away through the snowflakes.

"Same old Billy!" remarked the Sales Manager, as the two watched the form The Sales Manager made no answer; none was required.

"Never takes himself or his business seriously. Everything is one grand, hig joke," said Reilly. "You can't sell goods out of a joke book and you can't be a salesman and wear a fool's cap and bells. I dare say that somewhere there is a niche into which Billy would fit to perfection, but selling isn't it. If the God

of the Universe were the employer of us all and shifted us around as Henry Ford does his men until each one of us found the place where we belonged we would all land right sometime—most of us, anyway—but when each man has to find his place himself he doesn't always find it until too late."

"That was the main reason the Old Man didn't like Billy," said the Sales sation Billy announced that the car was the 'most valuable heap of wood, iron and leather that ever got accumulated in one pile.' He cracked jokes all the way through and then tried to kid the prospect into signing a contract but wasn't successful. The prospect bought of another dealer later and maybe Billy's employer wasn't wild! That was about the finish for Billy.



"IT WOUND UP BY HIS HAVING TO EXPLAIN THE JOKE"

Manager. "He wasn't serious enough."
"But you gave him a fair chance, didn't
you? Seems to me I've heard that
story."

"Yes," answered the factory man, "after we decided we didn't want him on the factory staff we placed him with a dealer who wanted a salesman, but the dealer wouldn't keep him. He said when he needed an official kidder he would study up on that line himself. He said Billy never could or never would talk to a prospect without bringing in some of that funny stuff, and that he didn't believe it helped make sales."

"I don't believe it myself," asserted Reilly. "I' had to give Tommy Trumbull a little talk on that one day; he was inclined to be too facetious in his sales talk. There's no use talking, if you don't take your goods seriously the prospect certainly isn't going to do it."

## Called Car "She' 'and "Good Boat."

"The dealer who gave Billy his chance was out and out disgusted with him," laughed the Sales Manager. "He said Billy would get a prospect out on the floor and refer to the car as 'she' and a 'good old boat' and tell how she could 'skin up any old hill like a cat with a dog after her.' That's realistic, it is true, but it doesn't sound just right, somehow or other. And he said Billy would 'he-he' and 'ha-ha' until it seemed as if the prospect would get hysterics.

"The dealer said he took particular pains one day to watch Billy work with a prospect. In the middle of his conver"But do you suppose that worried Billy? Not a bit! He got another job with another dealer and has been jumping from job to job ever since then. His genial disposition is a great asset when things look blue, but he is so darned humorous all the time that he doesn't take when there is business on hand."

"There's a time to be a bit funny and a time to be serious." replied Reilly, "and if there's any doubt in a man's mind ness aspect which is essential to a consummation."

"I've heard of sales that were made by kidding," contradicted the Sales Manager.

"Yes, and so have I, but they were made by men who knew their business," and Reilly slapped the desk with his hand. "The salesman who is a good judge of human nature knows that there are times when a bit of levity makes a hit with a prospect and that there are certain prospects who require a less serious handling, but if there is any doubt he sticks to his knitting.

#### The Joke That Tommy Explained.

"Tommy Trumbull cracked a joke on the floor one day when talking to a prospect and got into deep water with it; the prospect was a stolid type of man and when Tommy pulled his attempt at humor the prospect took it seriously. He couldn't conceive that anyone could try to be funny when they were talking business. Of course, being a joke, it was more or less deep for the prospect, and he asked Tommy what he meant. Of course, when Tommy saw his sally had missed fire he tried to brush the matter aside, but it wouldn't do. It wound up by his having to explain the joke, and when the prospect found Tommy had been trying to joke with him he didn't like it very well. He's been following up the old fellow ever since; in fact, he's up there this afternoon. He-

In from the snow came Tommy.
"Well, I sold the old German gentle-



"OH, THAT WAS EASY! BUT I HAD TO SAMPLE EVERYTHING HE HAD"

the safe way is to be serious. The man who can't crack a smile gets to be a frost with some people and the man who laughs all the time gets on the nerves of other people.

"When you talk to a prospect you should at least dignify your goods by giving them serious attention. If you are frivolous in your talk, even if you don't make frivolous remarks about the goods, the whole transaction loses that busi-

man," he announced, hanging up his coat and hat and wiping his wet face with his handkerchief.

"How did you get solid with him again?" inquired Reilly.

"Oh, that was easy," answered Tommy, "but I don't know whether I'll survive it. I had to sample everything in the wine cellar and say it was good. I said it—but! phew! I never knew such stuff existed!"

# BUSINESS THAT CAN BE SEEN AT A GLANCE

# New Rochelle Garageman Lays Out His Receipts for Year in an Up-anddown Line-More Graphic Than Figures and Quick Indicator of Business Conditions—"Curves" and How He Makes Them.

"How's the game going?"

"Let's see," replied the man addressed, "score's 12 to 6," as he studied the football statistics on the Clarion's bulletin board. He was still trying to delve deeper when a neighbor said, "Me for this over here," and moved over toward the Daily Bugle's offices, where the progress of the football from the minute it was put into play was traced in a zigzag line across a ruled blackboard.

- It was as plain as day—and graphic. A child could understand it. A sporting expert could learn what he wished from the figures, but for the layman who never had taken a degree in the sport the statistics were a bit unsatisfactory; however, when a man with a piece of chalk drew a line everywhere the ball went it was a visible and unmistakable record.

That the same method might be applied to business occurred one day to G. O. Reynolds, who operates a garage in New Rochelle, N. Y., as G. O. Reynolds,

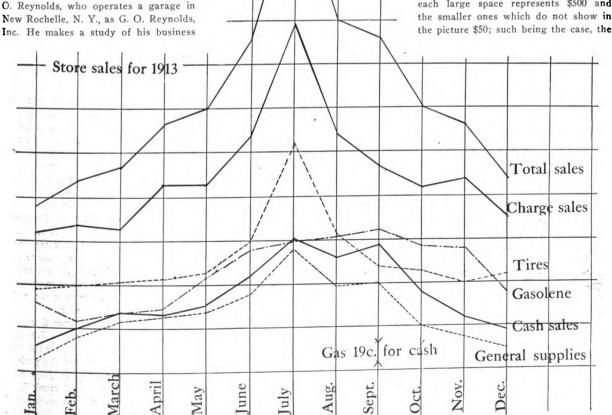
and likes to know just what is happening all the time. Figures would tell him, of course, but when one set of figures said gasolene sales went up, that repair receipts went down, that July was the big tire month and that several other departments of the business moved in the same or different directions at the same time, it was hard to follow the movements and comprehend their relations one to the other.

It was after a laborious session of studying mere figures that Reynolds

bethought himself of the curves he used to plot when he was in college; those curves were made by following a course through certain predetermined points on a sheet of plotting paper which was ruled in squares, each square being further ruled with nine cross lines each way separating it into hundredths. The paper is carried by nearly every stationer, especially near a school.

He took a set of figures and a sheet of plotting paper and laid out his first curve -which is not necessarily a curve but in this case was an angular line. Across the bottom of the paper he marked a space for each month and up the left side he marked the spaces by \$10 or \$100 or whatever figure was convenient.

This sheet was for gasolene sales, and while the chart which is illustrated herewith has no dollar divisions for the upand-down spaces, let it be assumed that each large space represents \$500 and the smaller ones which do not show in



"CURVES" WHICH SHOW THE BUSINESS THAT REYNOLDS'S STORE DEPARTMENT DID DURING THE YEAR 1913

total sales for January, as the chart shows, would be \$2,000, the charge sales \$1,550 and the cash sales \$450. In February the total dropped to \$1,500, the charge to \$1,100 and the cash to \$400. The line was drawn to touch these points and when drawn in this manner across the sheet it furnished an easily understood record.

#### Disclosing the Value of the Plan.

As carried out by Reynolds, the scheme visualized results in a manner and with a clearness not possible by the mere use of figures; still illustrating with the gasolene chart, the real value of the plan is made apparent.

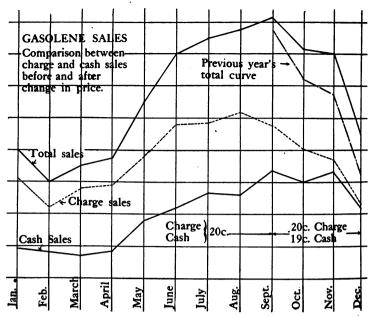
As is plain, the sales in 1913 fell off in February from the January mark but started climbing again in March and continued upward through the summer until the "peak" was reached in September, after which gasolene sales decreased during the remaining months of the year.

The chief point of interest in the chart, and illustrating its value, is the manner in which it shows the effect of making gasolene a cent cheaper for cash; September 1 Reynolds announced that whereas gasolene theretofore had been 20 cents for cash or charge, the cash price thereafter would be 19 cents. If a car owner wished to pay for his "gas" when he got it he could save a cent on every gallon.

#### One-cent Cut Boosted "Gas" Sales.

The chart shows that for the month of September after the new cash rate had gone into effect the cash sales made a very decided upward jump; at the same time the charge sales fell off, but did not decrease as much as the cash sales increased. The total line at the top shows that for September the 1913 sales surpassed the 1912 sales. Moreover, during October, November and December the 1913 cash sales held up strongly while the charge sales declined naturally, as might be expected, at the approach of winter, until at the end of the year the charge sales were but slightly in excess of the cash sales, whereas in June, July and August the charge sales were about double the cash sales.

The chart also shows the effect on the total sales of gasolene. In September the 1913 figures were slightly more than those for that month of 1912, a condition which might be expected to exist with any growing business, but in October the gain was greater, in November was still greater and held its own through December. The marked increase of the 1913 line over the 1912 line is attributable to the level at which the one cent



GASOLENE "CURVE," SHOWING RESULT OF CUT OF ONE CENT FOR CASH

discount held the cash receipts. Under normal conditions the 1913 total line should have dropped down much closer to the 1912 total line.

Were figures alone used the results, it is true, could be determined and comprehended, but with the sales represented by lines on a sheet of paper the visualizing of the results is striking. Furthermore, this added volume of cash came at a time when tradesmen were decrying the scarcity of money, and when a man needs money he will gladly take 19 real cents to 20 cents on the account books. The charge sales are largely to regular customers and the added increase, it is safe to assume, came to a large extent from trade which had not previously patronized the garage. In other words, the one cent cut for cash showed its advertising value.

#### Charts for the Various Departments.

The gasolene chart, being the simplest of the three which are illustrated herewith, best makes plain the operation of the scheme, but the charting as used by Reynolds is applied to all phases of the business as the other two charts indicate. One of the charts is for the store, alone—that is, the department in which tires, gasolene, supplies and accessories are dispensed. The other chart covers the entire business and has lines for store, repair-shop, paint-shop, storage, sales of cars and total.

Taking the store chart first, it will be noticed that the curve of gasolene does not seem to rise so high or so markedly as it does on the gasolene chart; this is due to the fact that the up-and-down divisions on this chart represent more money each then on the gasolene chart, and the same applies to the total business chart. The proportionate movements, however, are the same.

#### Gasolene Pulled Cash Curve Upward.

The lines on the store chart are marked and each may be easily followed through the 12 months; and in this connection the value of the visuality of the sales is again made apparent. The gasolene chart showed that cash and total gasolene sales increased following the reduction of one cent for cash and the reduction also had its effect on the whole cash business of the store; if a man bought gasolene and a spark plug and paid cash for the "gas" it was natural for him to pay cash for the plug, too, seeing that he had his pocketbook open. Referring, then, to the store chart, it is seen that the cash sales line for all store goods was pulled upward by the gasolene line. Cash sales from July to August moved downward, but when the gasolene cash curve went up in September the entire store cash curve followed it.

The tire sales curve moved upward gradually during January, February, March, April and May; in June the sales increased considerably, but the peak of the season was reached in July, after which the sales tapered off regularly to the end of the year with the exception of a slight increase in December, due doubtless to good winter touring weather.

What Reynolds learns from the tire curve is this: If the salesman for a tire company comes around late in the winter with a fine tale of getting tires in early and suggests delivery of a big stock April 1, Reynolds looks at his chart and, finding that there is no real increase in tires until June, declines to tie his money up before June 1. He has the use of his money two months longer than he might have without the chart to guide him.

#### Notes Unusual Conditions on Charts.

A vital feature is that unusual conditions or occurrences be noted on the charts. Thus, the change in the price of gasolene is noted on the September line, helping explain the change thereafter. His car-towing curve, which is not shown, made a phenomenal jump during the recent below-zero weather, when he towed 27 cars in 48 hours; the weather is noted on that chart.

On the total business chart the curve for the total is omitted in the illustration because, being the sum of all the other curves, it rises to a height inconvenient for illustration. It is highest in June and July and lowest in November.

The system as carried out by Reynolds acts as an indication of the health of the business; as the normal man's health

moves in a steady line, so should the health of a business. If a man begins to lose his appetite and loses weight, his curve is dropping and it is time to investigate; if any curve on the business chart drops when it should not, such as gasolene in midsummer, it is time to investigate, and, having found the reason, just as does a physician, the proprietor administers the proper medicine and pulls the curve back where it should be. Any man could watch his business more or less successfully without the charts, but with everything represented graphically by lines, any unusual occurrence is at once noticeable.

And there are other advantages. The store chart of the preceding year is hung in the store, and other departments, too, have their charts; the store employes naturally want their record to be better, so they endeavor to get this year's curve above last year's—and they actually have done it. It is not mere theory.

#### Daily Curves and What They Showed.

Daily charts, also, are kept; from these Reynolds learned that Tuesday of each week was the dullest day in the repairshop. Therefore, whenever a man had a car which could be brought in one day as well as another he was asked to send it in on Tuesday. This tended to keep the curve from dropping on Tuesday and caused repair receipts to maintain a more even line throughout the week. In daily practice the chart for the corresponding month of last year is placed above the chart for the current month.

This permits each department to know each day exactly what the same department did in that month of the preceding year; it is a more constant incentive than figures ever could be.

#### Helps Keep Tabs on Entire Business.

If an advertising campaign is launched the charts show whether it affects business; past charts show that when two holidays come consecutively the sales of the second day suffer to the advantage of the first. Week ends affect the sale of certain supplies, and while this makes a jump in the curve it is normal because it is the same every week.

Should a new man be placed in charge of a department or a change in other employes be made the curve is likely to show the result; the adoption of a new policy exhibits in this way a visible effect on business and as any change in system or conduct of the business should show its result, so should any change in result be traceable to its cause.

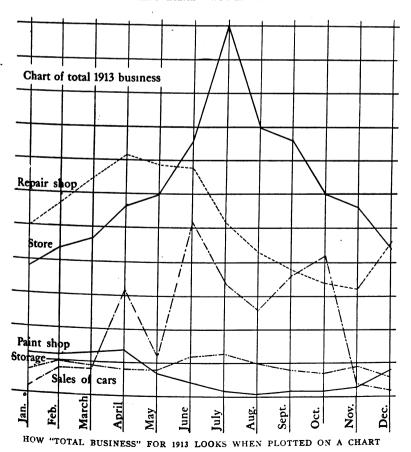
"We consider these business charts of the greatest value to every business man," said Reynolds in discussing them. "They are the easiest means of examining a business and finding its faults and merits. The plotting of these charts shows the phases of a business in such a way that their relations to other phases can be easily seen and studied. We plot the more important things and leave the less important to be studied separately.

#### Curves Should Be Steady and Even.

"The usual curves of a business should show a fairly steady rise and decrease and the efforts of executives should be directed toward keeping the curves running smoothly and seeing that each department keeps up to its mark."

An example of an unsteady curve is in the sale of cars, shown on the chart for the total business; this was fairly high in April, dropped in May, went to its highest point in June, went down again and did not reach another elevation until October.

As Reynolds enters upon the year 1914 his 1913 chart is like a map to a mariner; what happens one year is generally duplicated to a large extent in another year, and by scanning the visual record of 1913 business the probable course for 1914 is marked out where it may be seen at a glance.



# FARMER LOGICAL PROSPECT SAYS FORMER FARMER BOY

Points the Way to Salesmen and Says Car is "More for the Country Man"—What it Can do for the Soil Tiller.

When the sun has dropped behind the hills, the tired plow horse has been left to rest in his stall and the farmer, clad in a duster that obviates even the effort of changing his clothes, glides off in the evening with his family in his motor car, there has been drawn a picture that is a most effective point in the selling category of the salesman or dealer.

There is no reason why the prospering agriculturist should not own a car. Ex-Governor Frank Brown of Maryland, it is true, said some few weeks ago that the automobile was ruining the farming industry of America, and the esteemed gentleman may be entitled to his opinion, but no one who really knows the farmer and farm life and who knows the true status of the automobile is going to admit that the gasolene vehicle is anything but one of the greatest blessings that invention has offered to the man who makes his living from the land.

As such, there is unbounded opportunity for car sales in the rural portion of the dealer's territory; many dealers, bearing in mind the cry about mortgaging farms to buy automobiles, have a feeling of hesitancy in broaching the subject to the rustic prospect, but that selling to this class of men affords stronger arguments than to the city man seems only too apparent.

The car presents untold value for the farmer; all he needs is that the dealer tell him of them. As a former Illinois farmer boy says, the car is more for the country man than for the city man. "Not in the last hundred years," he said, "has there been an invention that has meant so much to the farmer as the motor car.

"When I was a boy it was an important occasion when any of us went 40 or 50 miles from home. I was reared only 60 miles from one of the largest cities in the central States and not until I was 12 years old did I have the pleasure of gazing at the wonderful sights of that metropolis.

"When I left the farm seven years ago conditions were practically the same. Though here and there was a motor car, considerable of a curiosity, yet the farmers, including my father, viewed it with disgust, saying it was not for us, and that such 'fool contraptions' were for

city people. My father and our neighbors were not narrow-minded. He had all the latest machinery and believed in the proper equipment for any work.

"When recently I visited the old homestead, I was met at the station by one of my brothers in a touring car, and we whizzed out over the roads that I had driven old Topsy along so many hundred times when a high-school lad. On the way we met many of the old neighbors and I failed to recognize them in their motor cars. For a time I almost imagined I was back at the thriving city, driving through one of the growing suburbs. Verily, there had been a change. Not until I got back into my old surroundings did I realize just how much the motor car had changed the entire life routine of the farmer.

"The next day my brother took me to the places that I had frequented when a boy. The car took us around so quickly that we had soon visited all the places close to home, so we started for a town 12 miles away, the very limit of the oneday drives we used to make with the old horse.

"We were soon there and went right on through, visiting towns that I had never known as a boy. When we got back home we had traveled 70 miles and been in three counties. We had been on many roads that I had never seen, even though I had spent 18 years of my life in that country.

"Just compare the life of my brother there with that of my father. My father worked hard, occasionally visited the relatives and neighbors who were not over a few miles away, and rarely ever traveled by train. In fact, he was living in a territory there that was limited to the distance that the family driving horse could cover in a day, and his life was nothing more than a monotonous daily routine. I believe it would have become almost unbearable except for the fact that he was accumulating considerable money from his work.

"Once a year we aimed to visit the State fair, as I was very much interested in cattle, and my father usually went along with me. But that was a big event, and we had to get up at about 1 o'clock in the morning to catch the train, driving 10 miles to the station.

"My brother lives an entirely different sort of life. His neighbors are anybody he has occasion to know in the several adjoining counties. He takes lunch with friends 25 or 30 miles away and does not leave home any earlier than when we used to visit our relatives two and three miles away. On hot summer evenings he takes the family in the car and they speed

over the smooth roads, enjoying life to the utmost, and they are all refreshed and rested. Perhaps there is a good lecture course at the county seat; it is only a matter of half an hour and they are there to enjoy it. My brother told me of some of the good lectures he had heard at the Chautauqua about 30 miles away. They went almost every day, because they could come home each evening in the motor car.

"I believe the greatest thing that the motor car has done for the farmer is to give him a taste of a better and more pleasant way of living. It has taught him that there is more enjoyment in life than he thought. He has come to know some of the real pleasures in this life, and this has caused him to work more with his brain. There is no longer that dull monotony of working hard all day and then going to bed about eight o'clock with the soothing thought that one has another hard day's work awaiting him. The farmer today is a business man and must use his brains more than his hands. The great progress he has made during the past few years along this line has been largely due to the motor car. His life is no longer confined to the 100 or 200 acres and the neighborhood immediately adjoining, but he is a man of state, and has become acquainted with what is going on in other sections, as well as in his own community.

"The farmer has come to realize that the good things in life are for him as well as for his brother living in the city. Go into the home of almost any well-to-do farmer and you will see gas lights, telephone, furnace, modern plumbing and a modern bath-room. The farmer's home is now on an equal with that of the average city man.

The old idea that the motor car was only for the city man has been changed. When we look at the matter seriously, we are almost brought to believe that the motor car is more for the farmer than for anyone else. The city man has the street cars that will take him anywhere he wishes to go, and quick train service to suburban points and other cities. He really does not need an automobile, and he has to compromise with his economical conscience to make himself believe that such an investment is justified.

"But the farmer has nothing to take the place of his motor car; nothing else can add so much enjoyment to his life. We no longer hear talk about the dull farm that was so common just a few years ago. Everyone realizes today that the farmer's life is the most ideal. And the change is due almost entirely to the coming of the motor car."

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# CHICAGO SHOW STILL A STARTLING SPECTACLE

(Continued from page 26.)

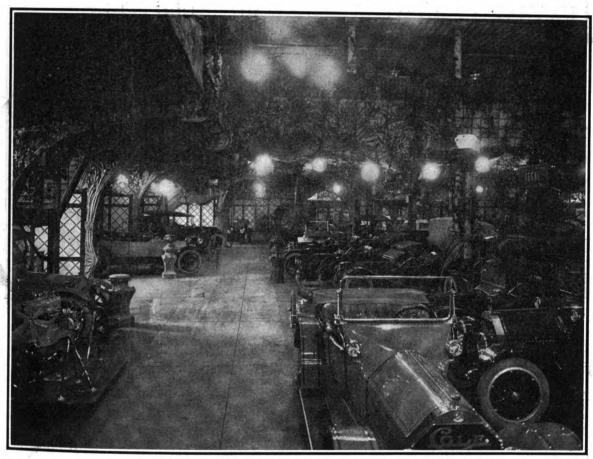
Among the trio of newcomers, the Rex incorporates constructional details which are, to say the least, radical, and, of course, brand new. For power, reliance is placed upon a four-cylinder water-cooled motor having cylinders

This dimension, however, has not been definitely settled as yet, the designers waiting upon demand. The body seats two passengers side by side.

The Coey cyclecar bears the distinction of being the only one at the show—and probably the only one anywhere else—that is fitted with a coupe body, in which accommodations are provided for two passengers. Outside of the fact that the body is of a size commensurate

car. The wheelbase is 96 inches and the tread 42 inches.

In construction, the Mercury is quite like the Coey and employs a twin-cylinder air-cooled motor, friction transmission and twin belt drive to rear wheel pulleys. The wheelbase, however, is longer—100 inches—and the tread some six inches norrower—36 inches. Two body styles are provided, one for a single passenger and the other for two



VIEW OF ONE OF THE COLISEUM'S BROAD SIDE AISLES WITH COLE EXHIBIT IN FOREGROUND

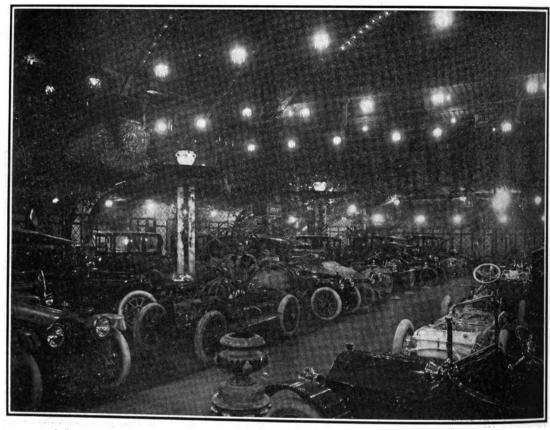
measuring 23/4 x 41/2 inches and cast in a block. The flywheel is at the front and its forward face, finished and highly polished, serves as the driving friction member, against which there is pressed a driven friction member, movable to obtain various speeds and reverse. The final drive is perhaps the most unique thing about the whole car. From the friction driven member there is a single shaft leading to internal gearing within the left front wheel hub; there is no drive to the right front wheel and hence the necessity for any differential mechanism is eliminated. Both front and rear the chassis is supported on quarterelliptic springs, the wheelbase being 100 inches and the tread nominally 44 inches.

with the size of the chassis, it is a "sure enough" coupe and appears quite comfortable.

The chassis that mounts the body carries a twin-cylinder V air-cooled motor with cylinders measuring 33% x 39/32 and develops approximately 15 horse-power at 2,500 revolutions. Friction transmission, providing five forward and two reverse speeds is employed, with twin V-section leather belts running over rear wheel pulleys; radius rods are provided to tighten the belts. Not the least of the interesting features of the Coey are the lamps; the side lamps are made entirely of glass and the single head lamp is set directly in front of what ordinarily would be the radiator in a water-cooled

passengers placed in tandem fashion.

In the realm of the silently-moving, luxuriously appointed electric car, the trend toward double control that was emphasized in Motor World's Before Shows Issue, is given still more emphasis by the Chicago display. There is scarcely an electric car on view that has not two separate and distinct control systems, so that either the person up front or the one behind can direct the movements of the car and control its speed. Incidentally, the display on the whole. containing as it does so very many broughams, has served to make necessary some sort of distinction between that type of body and the coupe; for, be it remembered, not so very long ago



CATACORNER ACROSS THE COLISEUM WHERE THE CONSERVATORY EFFECT IS MOST MARKED

nearly every electric was a coupe. One obliging salesman who was appealed to for enlightenment suggested that "a brougham is six or eight inches longer than a coupe"; and that seems to be the accepted difference between the two types.

All the electrics that were on view in New York are displayed in Chicago, and together with the half dozen of cars that make their first appearance they make a brave showing. Contrary to last year's arrangement, when some of the electrics were placed in the annex and some in the Coliseum basement, all of them this year are placed in the Armory, which greatly facilitates comparison. Among the double-controlled cars that had a New York "coming out" there are the Detroit, the Ohio and the Waverley and the Rauch & Lang. And they are just as they were in New York. The list of seven newcomers includes the Woods, the Century, the Standard, the Chicago and the Argo, Broc, Borland-Grannis trio, which hereafter are to be produced by the just formed American Electric Car Co.

surprise, for the features and the improvements of the others already have been made plain in the Before Shows Issue. But the Woods is new all the way through and represents a radical departure from previous Woods practice in more than one respect.

#### Woods Motor Hung in New Way.

To begin at the beginning of the car, which logically may be taken to be the motor, this all essential element is hung in a brand new way which is calculated to preserve its proper alignment and to permit it to transmit its full power with the least possible loss through friction. The motor is at the forward end of a substantial torque tube which encloses the propeller shaft to which the armature is solidly keyed; hence it is evident that there are no gears whatsoever between the motor and the rear axle other than the usual driving gears. The motor itself is solidly supported by two massive trunnions which are fastened to the chassis frame; thus a certain amount of movement is permissible without disturbing the correct alignment of Of them all, the Woods is the only real the driving mechanism. To run ahead

of the story a little bit, one of the interesting features which cannot well be overlooked in any examination of the motor, is the clever manner in which the speedometer is driven. The flexible shaft that connects with the instrument, which, by the way, is mounted in a unit with the necessary meters on the dash, is direct-connected to the forward end of the armature shaft.

Despite the substantial torque tube, the drive from the motor is not transmitted through this device. Instead, it is transmitted through heavy radius rods which find place for the first time on any Woods car. Another distinctive feature of the car which marks a noteworthy departure from previous practice is the method of mounting the rear springs, which, instead of being fastened to the chassis frame in the orthodox manner, are fastened to the radius rods at points near to their centers. Still another difference between the new Wood and the older, is the substitution of underhung worm gearing for the bevel drive gears that have been used in the past.

The batteries in the new car are car-

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ried in a tray at the back and by way of making plain the accessibility of the chassis it is pointed out that the whole tray can be removed quite easily and very quickly by the simple expedient of removing a small pin; the tray is mounted on rollers. The battery itself consists of 40 cells of 13 plates, cells of but 11 plates having been used in previous models. The whole car is larger throughout than its predecessors, the wheelbase being 110 inches. With a standard body and rear control the new car sells for \$3,150; with duplex control, the price is \$100 more.

#### Pedal for Speeds and Brake.

To the single foot-controlled electric -which, as nearly everyone knows, is the Argo-there has been added one other, though the control mechanism itself is radically different from that used in the original exponent of pedal control, and, in fast, is quite different from anything else. The car is the Century, and though the new control and also the new worm drive, which appears for the first time, both were told of in Motor World's Before Shows Issue, the mechanism nevertheless is interesting enough to tell of a second time.

The new control in the concrete is a magnetic control and is so arranged that the speeds may be "notched up" either by hand, with the aid of a tiny lever set atop an indicating quadrant at the steering wheel, or by foot through what is to all intents and purposes a veritable "clutch" pedal. If, in operation, the

fourth or highest speed is indicated with the miniature hand indicator, depression of the pedal and its subsequent release will engage the four speeds, one after the other, as the pedal comes up. Similarly, as the pedal is again depressed, the amount of current flowing to the motor is correspondingly cut off, until with the pedal fully depressed the current is all off and a dynamic brake applied. Obviously, the magnetic control lends itself quite readily to the use of double control, one indicator being placed forward and the other at the rear. Even in this new model, one of the chief distinguishing marks of the Centuryits underslung chassis-is retained.

With regard to the other five makes of electrics that appear at the show. there remains little to be told that has not already been told in the Before Shows Issue. In the Standard, for instance, practically the only change that has been made is embraced in the use of slightly larger bearings in the wheels, a slight lengthening of the springs and the substitution of sashless windows for the ones used in the past.

#### White Electric for the Pope.

In the Chicago electric there has been practically no mechanical change, the chassis being practically the same as it was when it made its first appearance at last year's Chicago show. Two of the more notable attributes of the Chicago, which are plainly apparent, are its exceptionally wide seats and its short turning radius; it is stated that even the

longest wheelbase Chicago produced will turn easily in any average street without backing. Not the least interesting of the three cars displayed is one which is done inside all in white and which according to one of the salesmen was sold " for the use of the Pope in Rome"; accordingly it is blazoned with the Panal

#### Ingenuity in Double Controls.

The Argo, Broc, Borland-Grannis trio, which are shown side by side, come in the same category as the Chicago; which is to say that except for a few minor alterations here and there, they are substantially the same as they have been in the past. The Argo, of course, is the original exponent of pedal control and for this reason, if for no other, is distinctive. In the Broc, the double control model is new and incorporates a number of interesting features. Thus, for istance, when the car is driven from the rear, the front control is locked, with a Yale key, so that it cannot be tampered with, and it does not move when the rear control levers are moved. Incidentally, the rear brake pedal, when not in use, drops down flush with the floor and almost out of sight. The Borland-Grannis line, which last year increased from one model to seven, is practically the same and the exhibit is graced by the only outside-driven limousine model in the show, a car which never fails to attract attention because of its unusual appearance and its suggestion of com-

# Summary of Car Exhibitors at the Chicago Show

Abbott Motor Car Co., Detroit, Mich.-Three Abbott-Detroit cars: One each four-cylinder touring and limousine and one six-cylinder tour-

Allen Motor Co., Fostoria, O.-Two four-cylinder Allen cars: One each touring and roadster; one chassis.

American Cyclecar Co., Bridgeport, Conn.-One Trumbull cyclecar.

American Electric Car Co., Chicago, Ill.-Two Broc broughams; two Borland-Grannis broughams and one each limousine and roadster; two

Argo broughams, one roadster and one chassis. American Voiturette Co., Detroit, Mich.-One six-cylinder Keeton touring car; one Car-Nation cyclecar chassis and one Car-Nation cyclecar.

Anderson Electric Car Co., Detroit, Mich.-Three Detroit electric broughams.

Apperson Bros. Automobile Co., Kokomo, Ind. Four Apperson cars: One each four-cylinder roadster, coupe and touring and one six-cylinder touring.

Auburn Automobile Co., Auburn, Ind.—Two Auburn cars: One each four- and six-cylinder touring; one four-cylinder chassis.

Baker Motor Vehicle Co., Cleveland, O.-Three Baker electric broughams.

Briscoe Motor Co., New York City-One fourcylinder Briscoe touring car and one chassis.

Buckeye Mig. Co., Anderson, Ind .-- Two fourcylinder Lambert touring cars.

Buick Motor Co., Flint, Mich .- Four Buick cars: One four-cylinder roadster and two touring; one six-cylinder touring and one four-cylinder chassis.

Cadillac Motor Car Co., Detroit, Mich .- Four four-cylinder Cadillac cars: One each sedan, touring, roadster, limousine; one chassis.

Cartercar Co., Pontiac, Mich .- Three four-cylinder Carter cars: Two touring and one coupe;

Case, J. I., T. M. Co., Racine, Wis .- Three four cylinder Case touring cars; one chassis.

Century Electric Car Co., Detroit, Mich .- Two Century electric broughams.

Chalmers Motor Co., Detroit, Mich.-Four sixcylinder Chalmers cars: Three touring and one berline; one chassis.

Chandler Motor Car Co., Cleveland, O.-Two six-cylinder Chandler cars: One each touring and coupe; one chassis.

Chicago Electric Motor Car Co., Chicago, Ill .-Three Chicago electric cars: One limousine and two broughams; one chassis.

Coey, C. A., School of Motoring, Chicago, Ill .-Two Coey cyclecars: one each roadster and

Cole Motor Car Co., Indianapolis, Ind.-Three

Cole cars: One each six-cylinder touring and roadster; one four-cylinder touring; one sixcylinder chassis.

Crescent Motor Co., Cincinnati, O.-Two Ohio cars: One each four- and six-cylinder touring cars.

Crow Motor Car Co., Elkhart, Ind .- Three fourcylinder Crow touring cars.

Davis, Geo. W., Motor Car Co., Richmond, Ind .-Three Davis cars: Two four-cylinder touring cars and one-six-cylinder touring.

F. I. A. T., Poughkeepsie, N. Y .- Two Fiat cars: One four-cylinder roadster and one six cylinder berline; one six-cylinder chassis.

Franklin Mfg. Co., H. H., Syracuse, N. Y .- Four six-cylinder Franklin air-cooled cars: One each roadster, coupe, touring and sedan:

Greer Co., Edwin, Chicago, Ill .- Three four-cylinder Ford cars: Two touring and one roadster.

Garford Co., Elyria, O .- One four-cylinder Willys-Knight touring car; one chassis.

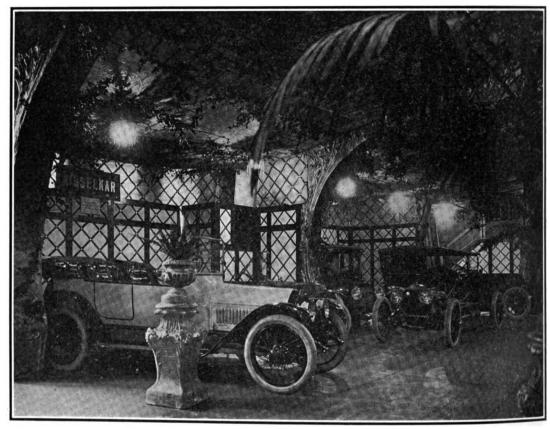
Great Western Automobile Co., Peru, Ind .- Two four-cylinder Great Western touring cars.

Haynes Automobile Co., Kokomo, Ind.-Four Haynes cars: One each six-cylinder touring, roadster and limousine; one four-cylinder tour-

Henderson Motor Car Co., Indianapolis, Int.-

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WHERE KISSEL CARS HOLD FORTH, SHOWING THE PALMS AND ONE OF THE DECORATIVE URNS

Three Henderson cars: One each four-cylinder

coupe and touring; one six-cylinder roadster. Herff-Brooks Corp., Indianapolis, Ind.—One each four- and six-cylinder Hersf-Brooks touring cars; two four-cylinder Marathon touring cars and one Marathon roadster.

Herreshoff Motor Co., Detroit, Mich.—Three Herreshoff cars: Two four-cylinder and one sixcylinder touring cars.

Hudson Motor Car Co., Detroit, Mich .- Five sixcylinder Hudson cars: Two touring and one each roadster, sedan and cabriolet.

Hupp Motor Car Co., Detroit, Mich .- Four fourcylinder Hupmobiles: Two touring and one each roadster and coupe; one chassis.

Imperial Automobile Co., Jackson, Mich.—Two Imperial cars: One each four- and six-cylinder touring cars; one six-cylinder chassis.

Jackson Automobile Co., Jackson. Mich.—Two Jackson cars: One each four and six-cylinder

Jeffery Co., Thos. B., Kenosha, Wis .- Four Jeffery cars: One each four-cylinder touring, roadand sedan; one six-cylinder touring and one chassis.

King Motor Car Co., Detroit, Mich .- Two fourcylinder King cars: One each touring and roadster; one chassis.

Kissel Motor Car Co., Hartford, Wis .- Four Kissel cars: Two six-cylinder touring; one each four-cylinder touring and coupe; one six-cylinder chassis.

Krit Motor Car Co., Detroit, Mich .- Three fourcylinder Krit cars: Two touring and one roadster.

La Vigne Cyclecar Co., Detroit, Mich .-- One La Vigne cyclecar.

Lexington-Howard Co., Connersville, Ind.—One each Howard six-cylinder touring and roadster;

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one each four-cylinder Lexington roadster and touring.
Locomobile Co. of America, Bridgeport, Conn.-

Four six-cylinder Locomobile cars: Two touring and one each berline and limousine; one chassis.

Lozier Motor Co., Detroit, Mich .- Three Lozier cars: One each four-cylinder roadster and tour-

ing; one six-cylinder touring.

Lyons-Atlas Co., Indianapolis, Ind.—Three fourcylinder Lyons-Knight cars: One each touring, edan and berline.

McIntyre Co., W. H., Auburn, Ind .- Four twocylinder air-cooled Imp cyclecars; one four-cylinder water-cooled McIntyre touring car. McFarlan Motor Co., Connersville, Ind .- One six-

cylinder McFarlan touring car; one chassis. Marion Motor Car Co., Indianapolis, Ind .- Five

Marion cars: One each six-cylinder roadster, sedan and coupe; two four-cylinder touring

Maxwell Motor Co., Inc., Detroit, Mich .-- Four four-cylinder Maxwell cars: Two touring, one landaulet and one roadster.

Mercer Automobile Co., Trenton, N. J .- Three four-cylinder Mercer cars: Two roadsters and one touring; one chassis.

Mercury Cyclecar Co., Detroit, Mich .- Two two-

cylinder air-cooled Mercury cyclecars.

Metz Co., Waltham, Mass.—Two four-cylinder

Metz roadsters.

Mitchell-Lewis Motor Co., Racine, Wis .-- Four Mitchell cars: Two six-cylinder touring; one each four-cylinder touring and roadster; one six-cylinder chassis.

Moline Automobile Co., East Moline, Ill.—One four-cylinder Moline-Knight touring car. Monarch Motor Car Co., Detroit, Mich .- One

four-cylinder Monarch touring car; one chassis. Moon Motor Car Co., St. Louis, Mo. -Three

Moon cars: One each four-cylinder touring and coupe; one six-cylinder touring; one six-cylinder chassis.

Motor Car Mfg. Co., Indianapolis, Ind.—Three six-cylinder Pathfinder cars: Two touring and one sedan.

National Motor Vehicle Co., Indianapolis, Ind. Three National cars: One each four-cylinder touring and roadster; one six-cylinder touring; one six-cylinder chassis.

Nordyke & Marmon Co., Indianapolis, Ind. Three six-cylinder Marmon cars: Two touring and one limousine.
Oakland Motor Car Co., Pontiac, Mich.-Fire

Oakland cars: Two six-cylinder touring and of roadster; one each four-cylinder touring and roadster.

Ohio Electric Car Co., Toledo, O.-Four Ohio

electric broughams.
Olds Motor Works, Lansing, Mich.—Three sixcylinder Oldsmobile touring cars.

Packard Motor Car Co., Detroit, Mich.-Four six-cylinder Packard cars: Two touring and one each roadster and limousine; one chassis.

Paige-Detroit Motor Car Co., Detroit, Mich.

Five four-cylinder Paige-Detroit cars: Two touring and one each limousine, roadster and

Partin Mfg. Co., Chicago, Ill.—One four-cylinder Partin-Palmer touring car; one chassis.
Paterson Co., W. A., Flint, Mich.—Two four cylinder Paterson cars: One each touring and

roadster. Peerless Motor Car Co., Cleveland, O.-Four arcylinder Peerless cars: Two touring and ose

each sedan and limousine. Pierce-Arrow Motor Car Co., Buffalo, N. Y. Three six-cylinder Pierce-Arrow cars: One each touring, limousine and convertible roadster; one chassis.

Pilot Car Sales Co., Richmond, Ind.—Two sixcylinder Pilot touring cars.

Pope Mfg. Co., Hartford, Conn.—One four-cylinder Pope-Hartford touring car.

Premier Motor Mfg. Co., Indianapolis, 1nd.—
Three six-cylinder Premier cars: Two touring and one roadster; one chassis.

Rauch & Lang Carriage Co., Cleveland, O.— Four Rauch & Lang electric broughams.

Regal Motor Car Co., Detroit, Mich.—Four fourcylinder Regal cars: Two touring and one each roadster and coupe: one chassis.

Reo Motor Car Co., Lansing, Mich.—Three tourcylinder Reo cars: One each touring, roadster and coupe; one chassis.

Rex Motor Co., Detroit, Mich.—One four-cylinder Rex cyclecar.

Speedwell Motor Car Co., Dayton, O.—One sixcylinder Speedwell rotary valve touring car; one chassis. Standard Electric Car Co., Saginaw, Mich.—Two Standard electric coupes; one chassis.

Stearns Co., F. B., Cleveland, O.—Three Stearns-Knight cars: One each six-cylinder touring and limousine; one four-cylinder touring car.

Stevens-Duryea Co., Chicopee Falls, Mass.—Three six-cylinder Stevens-Duryea cars: One limousine and two touring cars.

Studebaker Corp., Detroit, Mich.—Three Studebaker cars: One each six-cylinder touring and cabriolet; one four-cylinder touring; one sixcylinder chassis.

Stutz Motor Car Co., Indianapolis, Ind.—Three Stutz cars: One each four-cylinder touring and roadster; one each six-cylinder roadster and chassis.

Velie Motor Vehicle Co., Moline, Ill.—Five Velie cars: Three four-cylinder touring and one roadster; one six-cylinder touring car. Vulcan Mfg. Co., Painesville, O.—One four-cylinder Vulcan roadster; one chassis.

Waverley Co., Indianapolis, Ind.—Three Waverley electric broughams.

Westcott Motor Car Co., Richmond, Ind.—Three Westcott cars: One each six-cylinder roadsten and touring; one four-cylinder touring.

White Co., Cleveland, O.—Five White cars: One each four-cylinder coupe and touring; two six-cylinder touring and one berline.

Willys-Overland Co., Toledo, O.—Four four-cylinder Overland cars: Two roadsters and one each touring and coupe.

Winton Motor Carriage Co., Cleveland, O.—Four six-cylinder Winton cars: Three touring and one berline.

Woods Motor Vehicle Co., Chicago, Ill.—Four Woods electric broughams.

# Two New Engines Come to Surface at Chicago Show

Both Unheralded, the Charter and the Shaw Prove Ingenious and Interesting—Other Novelties That Cropped Up in the Accessory Department.

.When Chicago's big show opened its doors, and the proverbial breeze was permitted to frisk into the buildings along with the first of the spectators, the departments devoted to accessories were well filled, though there were not as many exhibitors by 56 as there were in New York-which is another way of saying that there were 203 of them. Of course, most of them had already done their turn at the Eastern show, so that it is not at all surprising that there were not a great many brand new things to be seen-that is, things new to those who already had seen the show at the Palace, or who had read the Motor World show numbers, which amounts to practically the same thing.

#### Unique Single Sleeve Motor.

Nevertheless, there are some novelties and a surprise or two. Not the least interesting in the never-before category are two motors, the Charter and the Shaw, made by the Charter Single Sleeve Motor Co., of 1443 E. 65th place, Chicago, and the Shaw Motor Co., of 187 N. Clark street, of the same city, respectively. The Charter motor has but a single sleeve valve, as the name indicates; but the name falls far short of indicating the ingenuity of the constructional details. To begin with, the cylinder itself-that is, the part in which the piston reciprocates—is a plain sleeve finished inside and out and bolted into the water jacket casting at the top only, where it is held by four bolts. This leaves an annular space between the outside of the cylinder casting and the inside of the water jacket, which also is finished true. In the annular space the sleeve valve is fitted, and it is rotated by means of spiral gears meshing with teeth cut in the bottom of the sleeve; the gear shaft—there is but one—runs in an oil bath. The intake and exhaust ports are cut high and are narrow, so as to give quick opening and closing. The sleeve is provided with irregularly spaced lugs at the bottom which preclude the possibility of getting it in wrong and so upsetting the timing of the valves.

#### Rotary Valve That's Adjustable.

Due to the peculiar method of construction, the cylinder proper-the inner sleeve-is free to expand in every direction because it is held only at the top where, incidentally, it is jacketed, the water head being an integral part of the casting. The sleeve valve, moving in its own compartment, is not subjected to the friction or thrust of the piston or to the direct heat of the combustion of gas; it is lubricated by a pressure feed, a pump driven by the engine keeping up a copious supply of lubricant. The removal of a cylinder sleeve is a simple matter; in fact, the makers claim that it is entirely practicable to remove one and replace it on the road, should such a thing become necessary for any reason. Of course, the valve is susceptible of equally easy removal and replacement. Among other things, it is claimed for the Charter engine that it can be run at very high speeds owing to the simplicity of the valve system and the lack of unbalanced reciprocating parts.

The valve system of the Shaw motor is like that of the Charter in one respect only—it has no poppet valves. The Shaw motor has a single rotary valve running along the top of the cylinders, the same ports serving to carry both the exhaust and the fuel. The peculiar feature of the rotary valve is that it is so constructed that wear can be taken up, which is by no means a common feature of valves of the rotary type. The desired end is accomplished by turning the valve taper and, of course, boring the seating to match, a special machine for the purpose having been invented and patented. Thus, when the valve wears, as it must in time, it can be set a little further into the seating and made just as close and tight as it originally was.

The incoming fuel, being cold, naturally tends to keep down the temperature of the valve, and, further, there is a water jacket around it, so that overheating is well provided against. Lubrication is effected by mixing oil with the fuel, as is done in many two-cycle motors with success. Of course, there is every foundation for the claim of the makers that the motor is extremely quiet and smooth running, for there are few parts that can make any noise.

#### Well Known Motors Out in Force.

As to the other motors on view, they all are well known both because they have been shown before and because they are standardized products. Buda, Continental, Model, Rutenber and Waukesha—they all are Western-built machines and they all are very much at home in Chicago. None of them show any changes that have not already been fully dealt with in Motor World's Before Shows Issue.

Such other things as are new are among the smaller accessories, and are of

widely varying kinds. The prevailing tendency toward the adoption of shock absorbers of the auxiliary spring kind was about as marked at Chicago as at New York, and two new devices that made their appearance are of this sort. The Johnson shock absorber, made by the Triple Action Spring Co., of 61 East 28th street, Chicago, has a pair of helical springs, one coiled within the other and both enclosed in a protecting steel casing. The inner spring is the longest and lightest and takes the lesser shocks, while the outer spring does the heavy work. An adjusting bolt, which is turned from the outside of the casing at the bottom, serves to adjust the device throughout a range of about 1,000 pounds, so that the best results can be obtained by actual trial.

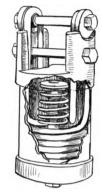
#### Auxiliary Shock Absorbers Increase.

The Halladay shock absorber, which is made by the L. P. Halladay Co., of Streator, Ill.-which concern, incidentally, makes a great variety of other things pertaining to automobiles-also is of the encased helical spring type and is made especially for Ford cars The casing encloses a single coiled spring of a size and strength that has been determined carefully with reference to the weight to be carried, and it is of such length as to give extremely soft riding. absorbing all the lesser shocks before they can reach the body. The casing, being perfectly tight, is packed with grease which provides ample lubrication for a whole season's running.

The Anderson Spring Co., of Detroit, Minn., shows a shock absorber that is a different thing altogether, though still it is an auxiliary spring. As the picture shows, it is a small leaf spring designed to be clamped inside the main leaf springs of the car. The clips at the ends are placed over the big spring, coming rather nearer to the ends than to the middle, and are loose, the spring playing up and down in them as long as the road is reasonably smooth. If the road is such as to cause abnormal flexing of the spring, however, either up or down, the auxiliary spring is brought into action, the separated leaves coming together more and more as the flexing increases. The resistance increases as the force of the spring action increases, and, as a result, the makers state that the tendency to spring breakage is almost eliminated and the throw of the car on rough going very greatly lessened.

One more lamp of the kind that enables people to keep within the law has been evolved, and is shown by the Henes Sales Corp., of 179 Washington street, Chicago.

Rather, it is an attachment for a lamp, consisting simply of a disk of aluminum of a diameter less than that of the reflector, so that when it is placed in position in front of the burner it permits



JOHNSON SHOCK ABSORBER

light to pass only around its edges, so that a soft, diffused light is the result. The device is styled the Challen dimmer.

The Boston tail light detector is shown by the Harding Specialties Co., Inc., of 755 Boylston street, Boston, and con-



ANDERSON SHOCK ABSORBER

sists of a red light set in a metal casing, which encloses the actuating device. When the tail light goes out or the wiring goes wrong the light burns, its red glow warning the driver that there is something that needs immediate attention. Another ingenious idea in the lamp



HALLADAY SHOCK ABSORBER

line is the rear signal and license illuminator of the Stafford Lamp & Number Co., of 1475 Michigan avenue, Chicago. This consists of a bracket to hold the number and directly over it a lamp casing with a long, narrow slit at the bottom to throw light on the figures and a round

bull's-eye showing a light to the rear of the car.

The numbers are interchangeable and are held in position by springs which absorb vibration and prevent rattling. Another style is made to take standard State license plates.

To help along starting up in cold weather there is a primer—the "Imperial Prim-ur," they call it—shown by the Imperial Brass Mfg. Co., of 1200 W. Harrison street, Chicago. This consists of a small double plunger pump with a barrel only 3 inches long and ¾ inch in diameter, attached to the dashboard of the car, drawing gasolene from the main line on the up-stroke of the handle and spraying it into the intake manifold on the down stroke. A needle valve operated by a small milled head provides a tight shutoff when the primer is not busy.

Also connected with the gasolene department is the "Doxameter" gasolene saver, shown by the Doxameter Sales Co., of 2132 Michigan avenue, Chicago. It is of the auxiliary air inlet type, attaching to the manifold above the carburetter, but differs from most of its kind in that it is entirely automatic in action, requiring no attention and no adjustment, but varying its air feed in proportion to the requirements of the engine.

#### Spark Plug Pump That Can Whistle.

In the construction of gasolene economizers, or gas savers, or whatever name one prefers for the attachment that admits extra air to the intake manifold above the carburetter, the Brown-Taylor-Greene Co., of 1323 Michigan avenue, Chicago, has gone a little further than some and has evolved a device that is automatic in action—or, to be more accurate, is controlled by the throttle, admitting more air at open throttle than at closed throttle.

By the simple expedient of cutting oil grooves in the face of a piston ring, the Auto & Accessories Mfg. Co., of 816 W. North avenue, Baltimore, Md., has evolved a brand new piston ring. The grooves collect oil and, incidentally, particles of grit and dirt, and the ring carries an oil packing that maintains tightness and reduces friction and wear. The oil packing principle is one that is old and well known, and the application of it in this case is founded on a practical basis.

Among the many tire pumps of the spark plug type there is one new one—the Marvel, made by the Marvel Auto Supply Co., of Cleveland, O. Another of the spark plug tribe of pumps is the Pneu-Meter, which not only is an air

#### MOTOR WORLD

pump but also is a watchman—that is to say, it keeps tabs on the pressure and when the proper point has been reached, for which point an indicator has been set, the air, instead of going to the tire, shoots out through a little whistle that signals that the tire is pumped up and ready for business. This is made by the Hill Pump & Valve Co., of 20 East Kinzie street, Chicago.

#### Valve That Makes Pumping Easy.

While the power tire pump people have done much to lighten the labor of tire inflation, there are many who can't have power pumps, and for them the labor at the hand pump is made as easy as possible by the Smith "easy pumping" tire valve, made by the Smith Tire Valve Co., P. O. Box 1965, Boston, Mass. The makers state that the hardest part of tire pumping consists in overcoming the resistance of the valve to opening, and the new valve has been designed to eliminate as much as possible of this resistance, the result being that the valve opens without perceptible effort and the only back pressure is that



NO-LEAK-O PISTON RING

due to the actual pressure in the tire. The new valve can be attached to the stem of any existing tire valve when changing tubes.

For convenience and speed in getting all four wheels of a car off the floor there is the Giant automatic jack made by the Automatic Tire Rest Co., of Kansas City, Mo. The front and rear axle lifters are attached to longitudinal bars, and when the car is driven over the apparatus until the front axle comes in contact with a spring bumper, the whole car is raised in a jiffy. Lowering the car to the floor is accomplished by the simple process of pressing a pedal.

#### Knock-down Plan for Car Building.

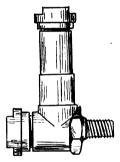
One of the simplest things in the tool line that ever "came down the pike"—that is, for an adjustable tool—is the Cochran "Speednut" wrench, made by the Cochran Pipe Wrench Mfg. Co., of 7800 Woodlawn avenue, Chicago. The accompanying picture shows it so clearly that a long story is entirely unnecessary. The movable jaw is geared to the teeth in the end of the pivoted handle, and the harder the wrench is pulled the tighter it grips the nut. Not only is it unnecess

sary to do any adjusting—for the wrench does it automatically—but the tool will fit without the possibility of spoiling the nut, even if the nut be over- or undersized.



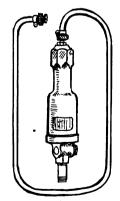
IMPERIAL "PRIM-UR"

The Auto Parts Co., of 739 West Jackson Boulevard, Chicago, which sells just what its title indicates, has made



DOXAMETER GAS SAVER

it possible for an ambitious man to build a Michigan 40-horsepower car on the knock-down plan—that is, the company



MARVEL SPARK PLUG PUMP

sells him all the parts and he puts them together. The parts for building the car, including, of course, motor and body, cost \$585. Lamps, carburetters and parts and accessories of all sorts are

handled by the concern which, however, is not a manufacturing company but a buyer and seller of "job lots" and other "bargains."

#### Piston Ring Packed With Oil.

The line of accessories that is shown by S. Breakstone & Co., of Chicago, is so complete that a mere list of the articles would fill a good-sized book, and while, of course, much of the material is of the well-known sort, there are a few brand new offerings. Of the number, the No-Leak-O piston ring, which is made by the Auto & Accessories Co., of Baltimore, shows how scientific knowledge can be applied to the improvement of existing things, for the ring consists of a more or less ordinary type of ring with oil grooves cut in the face that bears on the cylinder walls. The grooves hold oil and, incidentally, catch and retain particles of dirt and grit. The oil forms a cushion and a packing that is effective in providing good lubrication and preventing leakage.

The Dean Auto Devices Co., of Chicago, which makes a very complete line of electric horns and horn accessories,



GIANT AUTOMATIC JACK

including the Fordorn for operation on the magneto current of a Ford car, the Dad push-button in which the whole top moves and is easily worked even by a heavily gloved hand, has added to its line the Benjamin "vapor-proof" portable lamp, which is an electric lamp intended especially for use where there are highly inflammable vapors. The lamp has a heavy wood handle and a strong wire cage to protect the electric bulb, which is of the tubular type. The connecting plug swivels so as to prevent the twisting of the cable.

#### Specialties for Ford Cars.

For the man who has a Ford car and wants to know how much gasolene there is in the tank there's the special Ford gauge shown by the Henes Sales Corp., of 179 Washington street, Chicago, which screws into the filling hole in place of the cap. The mechanism is protected by a tube, and the gauge is used exactly as if it was simply a cap. The same concern shows the Cochran dash oil gauge, which indicates by a scale on the dashboard the amount of oil in the crankcase of the motor. The device can be installed without the drill-

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ing of holes. This also is especially adapted for use on Ford cars.

The Pierce speed controller, which, as is known to readers of Motor World, governs the speed of the motor according to the speed of the car, is shown by the Pierce Speed Controller Co., of Anderson, Ind. The chief upstanding feature of the device is that it does not prevent the speeding up of the motor to obtain full power for hard pulls at slow car speeds, though if the speed of the car is excessive the motor is throttled.

The Imperial Brass Mfg. Co., of 1200 W. Harrison street, Chicago, which produces about everything that can be made of brass, shows the "Tite-nut" reducing valve, which prevents leakage of gas from acetylene tanks—40 per cent. of which leak more or less, the Imperial people state. There is no pressure to speak of on the actual joint of the valve.

#### Air-Cooled Leather Tire Tread.

A tire protector that is designed to last and is made of leather, is the King, made by the King Tire Protector Co., Milwaukee, Wis. The vital feature of the protector is that the leather is cut with transversely disposed tabs, which permit free circulation of air for cooling and also act to prevent slipping. The protector is prevented from slipping on the tire by its tight fit.

Various malleable iron specialties constitute the chief output of the Wm. E. Pratt Mfg. Co., of 35 West Lake street.

Chicago; those displayed at the show are jacks of all sorts, tire supports, lug irons, tire levers, wrenches, bumpers, gas tank holders, and so on.

### Specialties of All Varieties.

The list of concerns that appear at Chicago but did not grace the New York show includes not a few of the more important manufacturers. There is the Lovell-McConnell Co., of Newark, N. J., showing Klaxon horns, of course, and three big chain makers-the Diamond Chain & Mfg. Co., of Indianapolis, Ind.: the Baldwin Chain & Mfg. Co., of Worcester, Mass., and the Whitney Mfg. Co., of Hartford, Conn. Among the manufacturers of electrical supplies and apparatus there are the Gould Storage Battery Co., of New York, and the Electric Products Co., of Cleveland, O., Wotton rectifying apparatus that is automatic in operation. Cotta gearsets are shown by the Cotta Gear Co., of Rockford, Ill., and gearsets are shown also by the Warner Mfg. Co., of Toledo, O., together with engine starters. Springs are shown by the Tuthill Spring Co., of Chicago, and the Hess Spring & Axle Co., of Carthage, O., which shows axles also. One of the big concerns in its line is the McCord Mfg. Co., of Detroit, which has its well -known line of McCord radiators and lubricators and McKim gas-

Other exhibitors who were not seen in New York include the New Haven Clock Co., of New Haven, Conn., which shows the Minot rim-wind, rim-set, 8-day antomobile clock in cowlboard and dashboard types; the Vulcan Process Co., Inc., general selling agents for the Northern Welding Co., of 25th and University avenue, S.E., Minneapolis, Minn., which manufactures Vulcan apparatus for handling oxygen and acetylene for welding, re-charging and the like; the Wadsworth-Howland Co., of Chicago. which specializes in "Jewel" polishes. cleaners, decarbonizers, non-freezing solutions, etc.; and the Fort Dearborn Mfg. Co., of Chicago, which produces special machinery, dies, tools, stamped metal specialties, experimental machinery-in fact, there seems to be little that they do not or cannot make.

#### Others Who Were Not at New York.

The Keystone Lubricating Co., of Philadelphia, shows Keystone lubricants; the Buchanan Electric Steel Co., of Buchanan, Mass., electric furnace steel castings; the Weaver Mfg. Co., of Springfield, Ill., jacks; the U. S. Ball Bearing Co., of Oak Park, Ill., ball bearings; the Western Tire & Rubber Co., of Kansas City, Mo., tires; E. Edelman & Co., Chicago, tire gauges, valves, electric meters and other specialties; the Reynolds-Brown Co., of Chicago, Arbeco glass lamps; the Morrison-Ricker Mfg. Co., of Grinnel, Ia., Grinnel gloves. etc.; and Sulzberger & Sons, Chicago, curled hair.

## The 203 Accessory Exhibitors and What They Display

Ajax Trunk & Sample Case Co., New York-Ajax trunk and tire cases.

American Bronze Co., Berwyn, Pa.—Non-Gran bearing metals.

American Hardware Corp., New Britain, Conn.— Corbin-Brown speedometers and Chelsea clocks, American Taximeter Co., New York City, N. Y.— Taximeters, Recordographs, and tail and license

Anderson Spring Co., Detroit, Minn.—Shock absorbers.

Apple Electric Co., Dayton, O.—Aplco lighting and ignition systems.

Arnold, N. B., Brooklyn, N. Y.—Slikup specialties.

Auto Parts Co., Chicago, Ill .- Parts.

Automatic Tire Rest Co., Kansas City, Mo.-Grant jacks.

B. & L. Auto Lamp Co., New York-B. & L. lamps.

Badger Brass Mfg. Co., Kenosha, Wis.—Solar lamps. Baldwin Chain & Mfg. Co., Worcester, Mass.—

Baldwin chains.

Bausch Machine Tool Co., Springfield, Mass.—

Bausch drilling machines.

Benford Mfg. Co., Mt. Vernon, N. Y.—Monarch spark plugs, lamp lighters and wheel pullers,

spark plugs, lamp lighters and wheel pullers, Blackledge, John W., Mfg. Co., Chicago—Velvet shock absorbers.

Bowser, S. F., & Co., Inc., Ft. Wayne, Ind.—Gasolene storage systems.

Braender Rubber & Tire Co., Rutherford, N. J.— Braender tires. Breakstone, S., Chicago, Ill.—General line of ac-

cessories.

Brown Co., Syracuse, N. Y.—Brown impulse tire

Brown, Wm. H., Cleveland, O.—Brown Trafilos and Brown top lifter.

Brown-Lipe-Chapin Co., Syracuse, N. Y.—Gearsets and bevel gears.

Brown-Taylor-Greene Co., Chicago, Ill.—Empire

Buchanan Electric Steel Co., Buchanan, Mich.— Steels and castings.

Buda Co., Harvey, Ill.—Buda motors.

Byrne, Kingston & Co., Kokomo, Ind. -Kingston carburetters and ignition specialties.

Carr, F. S., & Co., Boston, Mass.—Neverleek top materials.

Champion Ignition Co., Flint, Mich.—A C spark

Champion Spark Plug Co., Toledo, O.—Champion spark plugs.

Charter Single Sleeve Motor Co., Chicago, Ill.— Motors. Chilton Co., Philadelphia, Pa.—Publications.

Class Journal Co., New York, N. Y.—Publications.

Continental Motor Mfg. Co., Muskegon, Mich.—Continental motors.

Cotta Gear Co., Rockford, Ill.—Cotta transmissions. Cotta Transmission Co., Rockford, Ill.—Transmissions.

Cowles, C., & Co., New Haven, Conn.—Lamps, Fisher mechanical window lift and other automobile hardware.

Cox Brass Mfg. Co., Albany, N. Y.—Welding and decarbonizing apparatus, windshields and other specialties.

Cramp & Sons Ship & Engine Building Co., Philadelphia, Pa.—Cramp's bearing and other metal products.

Cyclecar Age, New York—Publications.

Dann Oil Cushion Spring Insert Co. Chicago,
Ill.—Lubricating devices for leaf springs.

Dean Electric Co., Elyria, O.—Elyria-Dean warning signals, speedometers, ignition and other specialties.

Dean Auto Device Co., Chicago, Ill.—Slectric

horns and battery cases.

Detroit Electric Appliance Co., Detroit, Mich.

Deaco starting-lighting-ignition systems.
Detroit Lubricator Co., Detroit, Mich.—Stewart
carburetters and Detroit mechanical force feed
oilers.

Detroit Steel Products Co., Detroit, Mich.-Detroit springs.

Diamond Chain & Mig. Co., Indianapolis, Ind.—Diamond chains.

Dixon Crucible Co., Jos., Jersey City, N. J.-Graphite lubricants.

Doehler Die-Casting Co., Brooklyn, N. Y.—Babbitt-lined bearings, die-cast pumps and other parts of white metal and aluminum.

### MOTOR WORLD

Double Fabric Tire Co., Auburn, Ind.-Interlock inner tires, Vulco and Junior patches, Jumbo boots and other tire specialties.

Doxameter Sales Co., Chicago, Ill.-Doxameter

Dunlop Wire Wheel Corp., New York-Dunlop wire wheels.

Dykes Co., J. L. G., Chicago, Ill.—Tire reliners. Dyneto Electric Co., Syracuse, N. Y .- Dyneto-Entz starters.

Eavenson & Sons, J., Camden, N. J.-Soaps and polishes.

Edelman, E., & Co., Chicago, Ill .-- Tire gauges, valves, etc.

Edison Storage Battery Co., West Orange, N. J. -Edison storage batteries.

Edmunds & Jones Mfg. Co., Detroit, Mich .-Gas, oil and electric lamps. Electric Products Co., Cleveland, O .- Wotton

automatic rectifiers. Electric Storage Battery Co., Philadelphia, Pa.-

Exide storage batteries. Eveland Engineering & Mfg. Co., Philadelphia,

Pa.-Electric riveting machines. Findeisen & Kropf Mfg. Co., Chicago, Ill.—Rayfield carburetters.

Fort Dearborn Mfg. Co., Chicago, Ill.-Stamping and screw machine work.

Fowler Lamp & Mfg. Co., Chicago, Ill.-Lamps. Franklin Mfg. Co., H. H., Syracuse, N. Y .- Die castings.

Frasse, Peter A., & Co., Inc., New York-Shelby tubing, Poldi tool steel, machinery and supplies, Renold chains.

Frazer Lubricator Co., Chicago, Ill.-Lubricants, soaps and polishes.

Funke Co., Herbert F. L., Inc., New York-Coventry chains, White & Poppe carburetters. G. B. Garage & Mfg. Co., Hempstead, L. I .-Portable garages.

Gabriel Horn Mig. Co., Gabriel and Jubilee horns and Gabriel rebound snubbers.

Garage Equipment Mfg. Co., Milwaukee, Wis .-Gemco automobile parts and accessories.

Gemmer-Detroit Starter Co., Detroit, Mich .-- Air starters and portable air compressors.

Globe Machine & Stamping Co., Cleveland, O .-

Globe metal tool and battery boxes.
Golde Patent Mfg. Co., New York—Golde oneman tops.

Gould Storage Battery Co., New York, N. Y .-Gould storage batteries.

Gray & Davis, Inc., Boston, Mass.-Gray & Davis lighting and starting systems and lamps.

Gray Pneumatic Gear Shift Co., New York-Gray pneumatic gearshifting system.

Halladay Co., L. P., Streator, Ill.—Bumpers, levers, pedals, tire carriers, license brackets, etc. Hans Motor Equipment Co., La Crosse, Wis .-Tank and pressure gauges and other specialties.

Harris Oil Co., A. W., Providence, R. I.—Harris lubricants and soaps.

Hartford Suspension Co., Jersey City, N. J.— Truffault-Hartford shock absorbers, Hartford electric brake, starting and lighting systems.

Havoline Oil Co., New York-Havoline oils. Hayes Mfg. Co., Detroit, Mich.-Pressed steel bodies and parts.

Heinze Electric Co., Lowell, Mass .- Heinze magnetos and other ignition specialties.

Henes Sales Corp., Chicago, Ill.-Gasolene and oil gauges and other specialties.

Hess Spring & Axle Co., Carthage, O .- Springs and axles. Hill Pump Valve Co., Chicago, Ill.—Spark plug

pumps. Hoffecker Co., Boston, Mass.-Hoffecker speed-

ometers. Housel Mfg. Co., Rochester, N. Y .- Auxiliary

air gasolene economizer.

Horseless Age Co., New York—Publications.

Ideal Steel Wheel Co., Cincinnati O.—Spring

wheels. Imperial Brass Mfg. Co., Chicago, Ill.-Carbu-

retters and brass parts.

International Acheson Graphite Co., Niagara
Falls, N. Y.—Graphite lubricants.

International Metal Polish Co., Indianapolis, Ind. Blue Ribbon metal polish, cement, etc. J-M Shock Absorber Co., Inc., Philadelphia, Pa.

-J. M. shock absorbers.

Johns-Manville Co., H. W., New York-J-M asbestos and other products, Jones speedom eters, Mezger spark plugs, Carter carburetters. Long horns, and other specialties.

Jones Electric Starter Co., Chicago, Ill.-Jesco starting and lighting systems.

Justice & Co., A. R., Philadelphia—Polishes. K-W Ignition Co., Cleveland, O.—K-W low-tension generators and other lighting and ignition



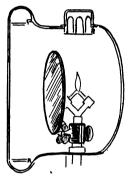
#### STAFFORD LICENSE HOLDER

Kellogg Mfg. Co., Rochester, N. Y .-- Air pumps and air starting systems.

Kemco Electric Mfg. Co., Cleveland, O .-- Fantype electric generators.

Kent Mig. Works, Atwater, Philadelp' a, Pa .-Atwater Kent ignition systems and Monoplex horns.

Keystone Lubricating Co., Philadelphia, Pa .-Lubricants.



CHALLON HEADLIGHT DIMMER

King Tire Protector Co., Milwaukee, Wis .- Tire protectors.

Leece-Neville Co., Cleveland, O.-Starters. Leonard, Ward, Electric Co., Bronxville, N. Y .-Ward Leonard lighting and starting systems. Leather Tire Goods Co., Niagara Falls, N. Y .-Woodworth treads and other tire specialties. Licurgus Anderson, Detroit, Mich. - Spring wheels.



### "SPEED-NUT" WRENCH

Lovell-McConnell Mfg. Co., Newark, N. J .-Klaxon horns.

M. & A. M.-Office.

McCord Mfg. Co., Detroit, Mich.-Radiators, lubricators, and McKim gaskets.

McQuay-Norris Mfg. Co., St. Louis, Mo.-Leakproof piston rings.

M. & S. Gear Co., Kansas City, Mo.-Muehl spiral differentials.

Matheson Spring Cushion Wheel Co.-Spring wheels.

Marburg Bros., Inc., New York-Mea magnetos and other specialties.

Mayo Mfg. Co., Chicago, Ill.—Spark plug pumps and tire gauges.

Metal Stamping Co., Long Island City, N. Y .--Hub caps, grease cups, wheel pullers, lighting outfits and other specialties.

Miller, Chas. E .- Excel jack, M. M. controller and equalizer, and a complete line of supplies and specialties

Model Gas Engine Works, Peru, Ind .-- Model motors.

Morrison-Ricker Mfg. Co., Grinnel, Ia.-Grinnel gloves, etc.

Mosler & Co., A. R., Mt. Vernon, N. Y .- Mosler Spit-Fire spark plugs and other specialties. Motor Vehicle Publishing Co., New York, N. Y.

-Publications. Motometer Co., Inc., New York-Motometers.

Motor, New York-Publications.

Motor World Publishing Co., New York-Motor World.

Motsinger Device Mfg. Co., Lafayette, Ind.-Motsinger ignition devices and carburetters.

National Coil Co., Lansing, Mich.-National magnetos and other ignition specialties.

National Lead Co., New York-Die-castings, paints and electric wire conduits.

National Rubber Co., St. Louis, Mo.-Narco tire repair material.

National Tube Co., Pittsburgh, Pa.-National steel tubing.

New Haven Clock Co., New Haven, Conn .-Automobile clocks.

Niehoff & Co., Paul G., Chicago, Ill .- Tire repair material.

North East Electric Co., Rochester, N. Y .-- North East electric lighting and starting systems.

New York Coil Co., New York—Nyco ignition specialties and other ignition supplies.

N. Y. & N. J. Lubricant Co., New York-Nonfluid oils. Overman Tire Co., New York-Overman tires.

Pantasote Co., New York-Solitaire tops and pantasote fabrics.

Peacock, Clarence N., & Co., New York-Ames shock absorbers.

Philadelphia Storage Battery Co., New York-Philadelphia storage batteries. Pierce Speed Controller Co., Anderson, Ind.-

Pierce motor and car speed controllers. Platt & Washburn Oil Co., New York-Lubri-

cants.

Pratt, W. E., Mfg. Co., Chicago, Ill.-Jacks. Randall - Faichney Co., Boston, Mass. - B-line grease guns, Copley leather-packed guns, Blitz spark plugs, Jericho gas regulator, Webster gasolene gauge and Ranfac vulcanizer thermometer; Jericho and Jubilee signals.

Remy Electric Co., Anderson, Ind.—Remy ignition, lighting and starting systems.

Reynolds-Browne Co., Chicago, Ill.—Arbeco glass lamps. Rhineland Machine Works Co., New York-

Rhineland ball bearings. Rich Tool Co., Chicago, Ill.-Tungsten steel

valves. Rose Mfg. Co., Philadelphia, Pa.-Neverout lamps

and fittings and license brackets. Royal Equipment Co., Bridgeport, Conn.--Brake

linings and other automobile accessories and Rutenber Motor Co., Marion, Ind.-Rutenber

power plants. Sager, J. H., & Co., Rochester, N. Y.-J. H. shock absorbers and other automobile special-

Schwarz Wheel Co., Philadelphia, Pa.-Wood wheels.

Schrader's Son, A., Brooklyn, N. Y .- Tire valve gauges.

Shaler Co., C. A., Waupun, Wis.-Shaler vulcan-

Sharrer Patent Top Co., Inc., New York-Sharrer tops.

Shaw Motor Co., Chicago, Ill .-- Motors.

Silvex Co., New York-Bethlehem spark plugs and polishes.

Simms Magneto Co., New York-Simms magnetos.

Sireno Co., New York—Sireno horns.
Smith Tire Valve Co., Boston, Mass.—Tire valves. Sparks-Withington Co., Jackson, Mich.-Sparton

horn, fans and other specialties.

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Spicer Mfg. Co., Plainfield, N. J .- Spicer univer-

Splitdorf Electrical Co., Newark, N. I.-Splitdorf high- and low-tension magnetos, starting and lighting outfits and other electrical specialties. Springfield Metal Body Co., Springfield, Mass .-Convertible metal bodies.

Stafford Auto Lamp & Number Co., Chicago, Ill. -License plate holders.

Thermometer Co., Boston, Mass. Standard speedometers, Abell tire pumps, and radiator thermometers.
Standard Welding Co., Cleveland, O.—Seamless

welded tubing and Stanweld rims.

Standard Woven Fabric Co., Framingham, Mass. -Multibestos brake lining and friction wheel material

Stewart-Warner Speedometer Corp., Chicago, Ill. Stewart and Warner speedometers, and pumps. Stickney, Chas. A., St. Paul, Minn.-Supplies and specialties.

Stromberg Motor Devices Co., Chicago, Ill .--Stromberg carburetters.

Sulzberger & Sons, Chicago, Ill.-Curled hair Thermoid Rubber Co., Trenton, N. J .- Thermoid and Nassau tires.

Thurber Rotary Starter Co., Detroit, Mich .--Thurber air starters.

Tingley, Chas. O., & Co., Rahway, N. J.-Vulcanizers and tire repair materials.

Torbenson Gear & Axle Co., Newark, N. J .-Torbenson undergeared rear axle assemblies. Trenton Brass & Machine Co., New York-Flechter carburetters.

Triple Action Spring Co., Chicago, Ill.—Springs. Tuthill Spring Co., Chicago, Ill.—Springs.
U. S. Ball Bearing Co., Oak Park, Ill.—Ball

bearings.

United & Globe Rubber Mfg. Co., Trenton, N. J. -Globe tires.

United States Light & Heating Co., New York-U. S. L. storage batteries and electric lighting and engine starting systems.
Universal Lubricating Co., Cleveland, O.—Tulc

petroleum lubricant.

Universal Machine Co., Bowling Green, O .- Ball bearings and three-piece universal joints

Vacuum Oil Co., New York City-Mobiloils and lubricants.

Valentine & Co., New York City-Paints and Valspar varnishes.

Veeder Mig. Co., Hartford, Conn.-Veeder odometers, hub odometers, revolution counters.

Vesta Accumulator Co., Chicago, Ill.-Vesta storage batteries and lighting outfits.

Vulcan Process Co., Minneapolis, Minn.—Oxygen and acetylene apparatus.

Wadsworth Howland Co., Chicago, Ill. - Jewell polish, anti-freezing solution, etc

Waltham Watch Co., Waltham, Mass .-- Automobile clocks.

Warm Hand Steering Wheel Corp., Poughkeepsie, N. Y.—Electrically warmed wheels.
Warner Gear Co., Muncie, Ind.—Clutches, trans-

missions, Lanchester-Daimler worm drive assem-

Warner Mfg. Co., Toledo, O .- Gearsets and engine starters.

Wayne Oil Tank & Pump Co., New York City-Storage systems.

Waukesha Motor Co., Waukesha, Wis.—Wauke-

Weaver Mfg. Co., Springfield, Ill.—Weaver jacks. Weed Chain Tire Grip Co., New York City— Weed anti-skid chains, Lyons grips and Dobbins blow-out repairs.
Western Electric Co., New York City-Chau-

phone telephone system.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.—Ignition, electric lighting and starting devices.

Wheeler & Schebler, Indianapolis, Ind.—Schebler carburetters

Whitney Mfg. Co., Hartford, Conn.-Whitney chains and keys.

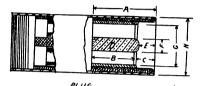
Willard Storage Battery Co., Cleveland, O.— Willard storage batteries.

Wykle, H. J., Metamora, Ill.—Slot gasolene machines.

### STANDARD CHARGING PLUG FOR THE ELECTRIC VEHICLE

Electric Vehicle Association Recommends and Urges Adoption-Has Approval of Fire Insurance Underwriters.

With a view to establishing standard sizes and forms for the charging plugs and receptacles of electric vehicles and to avoid the trouble that follows the use of differing types, the committee appointed for the purpose by the Electric Vehicle Association of America has evolved the design shown in the accom-



RECEPTACLE E. V. A. STANDARDIZED PLUG

panying illustration and the dimensions given in the table.

Cap.	Α	В	С	D	K,	F	G	Н	1
50_	1 15-16	1 9-16	3-8	1 5-8	5-16	.373 .375	1.125 1.127	1 725	11-8
150						425	1 400		1 13-32
Cap.					Mac.	Sar.	Mac.	Sar	
		_K	<u> </u>	M	N	N	0	o o	P
50	7-8	K	<u>L</u> 3-8	_M2	.375	.360	0 1.123 1.125	0 1.135	_ P_

The design includes two sizes, one for 50 amperes and the other for 150 amperes normal capacity; the National Board of Fire Underwriters has approved the design with an allowable overload of 50 per cent. It is noted especially that the inside or central contact is the negative and the outside or shell contact the positive.

Attempts to charge a battery using a plug that does not fit the receptacle is at least a nuisance, and not infrequently results in the burning of both parts due to poor electrical contact. A tinkeredup charging connection sometimes will loosen up during the charge and either cut off the current or cause an arc that will fuse the copper.

In view of the bother that results from

the use of differing types of charging plugs and receptacles, and the convenience of having uniformity in this detail, the association is anxious that manufacturers and users should make every effort to promote the general use of the standard plug.

#### Silver's Gold for Chauffeurs.

Desiring to give the "big, heavy car" a fair show at the hands of the chauffeur, C. T. Silver, who recently took over the Peerless branch in New York City, has instituted a "chauffeurs' bonus plan," the object of which is to induce the drivers of Peerless cars to give the cars the best attention compatible with every-day driving; the plan was promulgated upon the theory that many shortcomings and poor results in a large, powerful car are due to the inefficiency or indifference of the driver.

To encourage efficiency and courtesy on the driver's part, Silver hit on the plan of giving each driver of a Peerless car purchased from his company \$10 a month for a period of 12 months for every month that the car gives its full, satisfactory service to the owner. During this period the car must not be laid up for repairs or adjustments except it is not the driver's fault. This plan goes into effect on the purchase of every Peerless car, provided the owner has no objection.

It is anticipated the drivers of Peerless cars will give their vehicles better attention and avoid the many little troubles which might arise to annoy the owner and to cause him unnecessary expense.

### Light Leaks That Indicate Errors.

When using a straight-edge, a surface plate or a gauge of any kind intended to, make close contact with the object under test, it is usual to hold the object and the gauge up to the light to see if there is any space between. Where the object cannot be lifted to the light, the light often can be taken to the object; an electric light is convenient, and in some cases a mirror can be used to reflect more or less distant illumination. The stronger the light the smaller the space that can be detected. An interesting application of the principle is in use at the Ford factory in Detroit, in gauging cylinder bores. When a cylinder has been finished a plug gauge of the proper size is slipped in, a strong electric light first having been put into the cylinder. If the bore is of the right size no light shows between the edge of the gauge and the cylinder walls, while any oversize will permit the passage of more or less light.

### MAKING ONE PAIR OF LAMPS PERFORM DUTIES OF TWO

Statistics Gathered at New York
Show Reveal Growth of Practice — Three Methods in
Vogue Contrasted.

That the tide toward the elimination of side lamps has set in, and set in probably a great deal more strongly than the average person imagines, is revealed by a count of the cars which appeared at the recent National show in Grand Central Palace and which now carry but one pair of lamps where before they had two pairs. Of the 78 different brands of cars on view, no less than 26, which is equal to exactly 33 1/3 per cent., no longer are equipped with the usual type of side, or running, lamps. Instead, the functions of these hitherto necessary adjuncts now are performed by the headlamps, either by connecting the high-power bulbs in series when less light is desired or necessary, by inserting a resistance in the line to dim the lamps, or by adding a second pair of bulbs in the headlamp reflectors.

Among these 26 makes of cars. the method of fitting a secondary pair of much smaller bulbs in the headlamp reflectors is by far the most popular. Seventeen makers, including Jackson, Premier, Winton, Paige-Detroit, White, Chalmers, National, Moon, Pullman, Imperial, Pathfinder, Fiat, Auburn, Moline, Cameron, Partin-Palmer and Chandler, have adopted this method of providing either much or little light, at the option of the driver or the command of city fathers.

The method, quite obviously, is exceptionally simple and possesses the advantage that when running under the subdued light of the smaller pair of bulbs, the failure of one does not necessarily effect the other. It is conceivable that the presence of the small bulbs may ir. a measure impair the efficiency of the reflectors when the larger bulbs are used, but the impairment in any case is so slight that it is to all practical purposes a negligible quantity. For the most part, these secondary bulbs are placed at the top of the reflector, the effect being to cast the reflected rays of the smaller bulbs downward. In one case, however, notably that of the Imperial, the smaller bulbs are placed in the bottom of the reflectors.

The next method of making possible the elimination of side lamps that is most in vogue is to provide means whereby the single pair of high-power bulbs normally used for touring service, can be connected in series so that their brilliancy is materially reduced. In addition to reducing the brilliancy of the bulbs, the method of connecting them in series also results in a positive saving of current. This is best made plain by a simple example.

One 16-candlepower carbon lamp operating on 110 volts, for instance, draws one-half ampere, as practically every one knows. Two lamps the same size, therefore, would draw one ampere, provided they are in multiple. But in placing them in series they represent a resistance to the passage of current that is equal to twice the resistance offered by only one lamp.

It follows, therefore, that but half the current consumed by one lamp will flow through the two in series. Hence, the two lamps in series draw but one-fourth of the current drawn when they are in multiple. The same holds good regardless of the size of the lamps, the voltage or the amperage. This saving in current, however, is offset in part, at least, by the fact that failure of one lamp, when the two bulbs are connected in series, immediately operates to extinguish the other.

At present, there are just seven makers who have adopted this method of dimming the head lamps temporarily, the list including such well-known names as Apperson, Lozier, Krit, Abbott-Detroit, Reo, Hudson and Ohio.

The third method, which is practiced by but two makers out of the 26—namely, Detroiter and Regal-is to insert a small resistance in the line to reduce the candlepower of the bulbs. This method possesses the advantage that the failure of one lamp does not effect the illumination of the other. Obviously, the use of a resistance results in the loss of a certain amount of current. The loss, however, well may be overlooked, for it is small in any case, and experience tends to prove that the average generator has no trouble at all in making up for it. Where no generator is used, on the other hand, the practice of using resistance to absorb part of the current scarcely is to be recommended.

### Tracing Linen for Gasket Use.

Where a thin, tough gasket is needed and where there is not much heat, tracing linen is an excellent material to use. This is a linen fabric covered with a bluish, translucent preparation and is used to make drawings from which blue-prints are made. Wherever much draughting is done there is plenty of gasket material in the shape of discarded tracings.

## AMERICAN CARS DOMINATE MONTREAL'S ANNUAL SHOW

First Half, Devoted to Pleasure Cars, Roster of Well-Known Names—Trucks to Follow —The Exhibitors.

Two weeks this year and not one, as was the case last year, is to be the duration of Montreal's fourth annual show, which was opened in Drill Hall in that historic Canadian city on Saturday afternoon, 24th inst.; one week, which is the present week, is devoted exclusively to pleasure vehicles and accessories, and the second week, immediately following, will be devoted to commercial vehicles. In both cases, however, the show, or rather the shows, will be under the auspices of the Montreal Automobile Traders' Association.

Needless to mention, the great Drill Hall that holds the exhibits, and that only just holds them, be it added, has been almost completely transformed for the occasion, what with streamers of colored bunting and flags and strings of scintillating tungstens to chase away the gloom and the shadow. All told, there are upward of 62 separate exhibits, including, as well as Canadian and British and French cars, quite a number of thoroughly American cars that are made just across the Canadian border. Such well-known names as Winton, Franklin, Reo, Locomobile, Pierce-Arrow, Oldsmobile, Ford, Pope-Hartford, Studebaker and a number of others loom large on the decorative signs that mark the exhibitors' spaces and lend a distinctly international air to the show. A partial list of those who exhibit and some of the cars on view is as follows:

Keeton Motors, Ltd., Keeton and Only; Oxford Motor Cars & Foundries, Oxford; E. N. Hebert, Pullman; S. Gagnon, Jeffery; McLaughlin Motor Co., McLaughlin-Buick; Fournier & Rodier, McFarlan; Tate Electrics, Ltd., Tate electric; Ford Motor Co., Ford; Canadian Fairbanks-Morse Co., Mack trucks; Pope-Hartford Motor Co., Pope-Hartford and Overland; Weldon Motor Co., Humbrette; Cadillac Motors, Ltd., Cadillac; Comet Motor Co., Packard; Studebaker Corp. of Canada, Ltd., Studebaker; Russel Motor Car Co., Russel-Knight; Victor Levesque, Abbott-Detroit.

Grenier Warrington Motor Co., Pierce-Arrow; Rousseau Bros., Ltd., Cole; Haynes Auto Co., Haynes; Spencer & Co.; National Equipment Co.; Winton.

Truckwell Bros.; Windsor Mfg. Co.; Goodyear Tire & Rubber Co.; McKeen Co.; Columbia Tire Co.; John Miller & Son; Canadian Rugger; Gadbois Ltd.; Auto Garage Co.; Wolseley Motor Co.; Albion Motor Co.; Canada Cycle & Motor Co.; Legare Motor Co.; Royal Auto Co.; Gareau Motor Co.; N. Herbert Co.; Primm & Co.; Stockwell Motor Co.; Gutta Percha Rubber Mfg. Co.; Dunlop Tires, Ltd.; F. S. Bowser; Franco-American Auto Co.; Imperial Oil Co. Cars: Oldsmobile, Locomobile, Reo, Peerless, Jackson, Berliet, Franklin,

### Fourth Annual Show in Scranton.

Scranton's Town Hall is being put to a new use this week; it houses the fourth annual automobile show to be promoted by the dealers in that Pennsylvania city and it will continue to house it until Saturday night, 31st inst. On Monday evening, 26th inst., the wide doors were thrown open, revealing the displays of some 23 dealers in pleasure and commercial vehicles, to say nothing of a generous sprinkling of accessory displays. All told, there are some 27 different makes of pleasure cars on view. The exhibitors were:

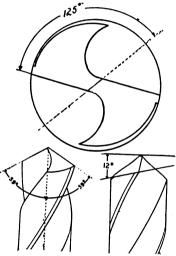
A. J. Baker, Jr., Hupmobile; R. M. Zehnder, Stanley steamer; Conrad Bros., Ford and Standard Electric pleasure cars and Partin-Palmer trucks; Central Automobile Co., Jackson; Peter Bevrent, Haynes pleasure car and Little Giant truck; International trucks; Susquehanna Motor Car Co., Cadillac; Fleming Motors Co., Hudson and American; V. A. Simrell, Studebaker and Speedwell; Lackawanna Automobile Co., Chalmers and Packard pleasure cars and Packard truck; Economy Automobile Co., Locomobile and Buick; Commercial Motor Co., Garford truck; Kirchoff & Demuth, Imperial; Maccar Motor Truck Co., Maccar trucks; A. J. Schnell, Jeffery; Eureka Motor Car Co., Franklin pleasure car and Brockway truck; P. J. Needham, Maxwell; Harry H. Smith, Cole; Bishop Bros., Krit; Oakland Motor Co., Oakland; Auto Supply Co., accessories; Atlantic Refining Co., oils and greases; William C. Robinson Co.; Chas. B. Scott Co.; Pyrene Mfg. Co.; William E. Baker; Auto Heating Co.; Chas. Adams Co. and Lackawanna Oil & Grease Co. John Rawling, Indian motorcycles.

The L & G Chain Co. has been formed in Detroit to market a non-skid chain for trucks invented by B. L. Leavitt. The principals in the concern are B. L. and Harold A. Leavitt and M. C. Goodman.

## PUTTING NEW POINTS ON DRILLS THAT WON'T CUT

Importance of Correct Angle in Prolonging Twist Drill Life—Sharpening Rules and Angles that Give Best Efficiency.

In the light of the experience of those who are in a position to know whereof they speak, there are remarkably few persons, even in the ranks of veteran machinists, who know how to grind an ordinary twist drill in the way it should be ground. As a matter of fact, the comparatively high death rate in the drill family is due to a greater extent to improper grinding than to any other single



CORRECT DRILL GRINDING ANGLES

cause. It is not the easiest matter in the world to grind a drill properly by hand—that is, without a proper drill holder. But drill holders are simple and inexpensive, and even where one cannot be obtained, the operation requires only a knowledge of the proper angles and an ordinary protector, or what is even better, a tool for gauging the angles, such as can be supplied by almost any drill maker.

For the greatest drilling efficiency, the cutting edges must be perfectly straight and of exactly the same length, in addition to forming the proper angle with the axis of the drill. For general use this angle should be 59 degrees. The angle of lip clearance, or backing off of the cutting edges, is of equal importance, the best practice indicating an angle of 12 degrees as being most efficient. This angle must be uniformly increased toward the center of the drill, so that a line

across the center will lie at an angle of 125 degrees with the cutting edge.

Occasionally, it is advisable to vary slightly the angle of the point and lip clearance, according to the kind of material being drilled. In soft material, for instance, where a heavy feed is used, it may be found advantageous to increase the lip clearance angle to 15 degrees instead of 12 degrees, with a like increase in the angle toward the center. It must be remembered, in this respect, that more drills have been split up the center by insufficient lip clearance angle at the center web than in any other way.

For use in extremely hard material, on the other hand, it sometimes is wise to decrease the angle of lip clearance to 9 degrees at the periphery, the point angle being 68 instead of 59 degrees. Inasmuch as most drill troubles can be traced almost directly to improper grinding, it is a wise precaution to examine points frequently and to measure them to make certain that their several angles are correct.

### Chamber Sends Out Standards Data.

In carrying out its plans for the promotion of standardization in the construction of motor trucks the National Automobile Chamber of Commerce, Inc., 7 East 42d street, New York, successor to the Automobile Board of Trade, is mailing to all manufacturers of commercial motor vehicles sets of cards showing the standards recommended as specified in 1912 by the National Association of Automobile Manufacturers. The seven cards of the set are of uniform size, measure 8 x 10 inches and can be folded in the middle for smaller files. They cover the standard warranty, speed rating, body weight allowance, overload allowance resolution, caution plate, frame dimensions and demonstration charges. The information given is complete and in concise form.

### Hints on Fitting Bearings.

The danger of throwing connecting rods out of true when scraping in a set of big-end bearings can be almost eliminated by doing practically all the work on the cap, or the lower half of the bearing, touching the upper part only if absolutely necessary, and then being careful to work equally on each side of the center toward the ends. The process may be reversed, if desired, and the work done on the upper half, but all the rods should be treated in the same way. The same principle holds true with regard to the crankshaft, or any other part running in bearings and requiring to be truly located.

### MOTOR WORLD

## PRINCIPLE AND PRACTICE OF COLD WEATHER PRIMING

Why Motor-Spun Engines Should
Fire Promptly — Spraying vs.
Squirting for Priming in
Winter Weather.

Not a few users of storage batteries for electric lighting and starting systems, as well as for the propulsion of pleasure and commercial vehicles, have worried, or lost their tempers, or said unkind things about the manufacturers—according to their individual ways of taking things—upon discovering that in cold weather their batteries failed to give as good results as in the summer season. Not infrequently the battery itself has been suspected of untimely deterioration. As a matter of fact, however, it usually is merely the fact that the weather is cold that makes the difference.

A battery likes warmth—thrives on it. Up to a certain point the warmer it is the better it works, the limit being, for practical purposes, about 100 degrees F. When it gets warmer than that there is danger of the jars softening and bulging and insulation weakening. Cold, however, makes a battery sluggish in every way, both charging and discharging.

Take out an electric car with a fully charged battery and operate it with the outer air at a temperature of freezing, and the battery will lose some of its liveliness, by degrees. This probably would be noticed only by a close observer; but after the battery gets down to 32 degrees F. it will work so much less efficiently than when warm that it will give only 68 per cent. of the output that could be expected under normal conditions in summer, with the temperature at 70 degrees. It does not indicate that there is anything the matter with the battery; it merely means that the battery is doing what it is natural for it to do-becoming torpid from the cold. If the battery gets down to zero and stays there while working it will give up only half its normal discharge, which, of course, means that only half the normal mileage can be covered.

A discharged battery that is very cold should be put on charge at a higher rate than the usual charging rate to warm it up a little. At first the rise of voltage that accompanies the charge and indicates the progress of the "filling up" process will be slow; as the cells get warmed a little, however, the voltage will rise with considerable rapidity, and the current input should be cut down

until it is normal. That is to say, as the increase of voltage accompanying the warming of the battery is more rapid than when charging a battery in summer, so the cutting down of the charging current by means of the rheostat or its equivalent should be correspondingly rapid, so that the voltage, the amperage and the temperature of the battery will reach normal somewhere about the same time.

Under the conditions outlined, a battery will take its full charge, regardless of the temperature of the atmosphere. Upon becoming chilled, however, it will fall off in efficiency, as already stated, though anything that tends to raise the temperature will raise the efficiency. For instance, if the battery is worked so hard that its temperature rises—which is not by any means the best thing in the world for a battery, as a rule—it will regain its liveliness, though of course there will be the usual losses that accompany discharge at rates higher than normal.

Of course the same reasoning applies to all storage batteries that are exposed to temperature changes, whether the battery is used for lighting, starting or ignition systems, or for driving power. It may be said, however, that a small battery, as in the lighting and starting equipment of a gasolene car, is likely to show the effects of cold more quickly than a large one because there is a smaller body of lead and electrolyte and the cold strikes through more rapidly. And obviously the reverse is true, the small battery feeling a rise in temperature sooner than a large one.

As the battery is chilled it will be more sluggish on the charge. In other words, it will take less current and give less current. Thus a car that is used with the lamps burning a large part of the time and frequently started by means of the electric starter will be more likely to run short of current than in warm weather, though under ordinary running conditions the automatic system will take care of the difference by working the generator a little longer. If the battery shows signs of being stingy with current as the weather grows colder, it is not a difficult matter to give an occasional good, long, full charge in the garage either by running the engine or from an outside source of current.

As for the possibility of freezing the electrolyte in the cells, it may be said to be so remote, in this part of the world, that it need cause no worry. A discharged battery will freeze a good deal sooner than a charged battery; but as long as the temperature is not far below zero there is little danger in either case.

There is another possible cause of short winter mileage that is attributable only indirectly to the cold. Electric pleasure cars are likely to become more or less sulphated, which reduces their capacity.

While on the subject of sulphation it may be well to say that the formation of lead sulphate is a normal process in the operation of a storage battery: lead sulphate is formed on the plates during the discharge, and during the charge it is converted again into lead oxide or lead peroxide. This occurs in all lead-sulphuric acid battries. It is the formation of excessive quantities of lead sulphate. however, that does the mischief and is commonly called sulphating. More sulphate is formed than can be reconverted during an ordinary charge, and therefore in cases where the condition is not serious a long overcharge at a slow rate is usually sufficient to effect a cure. though each case of sulphation takes needlessly from the life of the plates. But where the sulphation is so bad that an overcharge will not reduce it the plate is permanently impaired and its capacity cut down. The lead sulphate is an insulator, to all intents and purposes, and is very hard and refractory.

If the batteries are not to be used much during cold weather the rule to follow is that which always is given for idle batteries-keep them fully charged, and deterioration will be avoided. The batttery does not necessarily bear all the blame for loss of mileage in winter, however. The cold thickens up lubricants and makes everything that runs in bearings turn more or less stiffly; the roads are not unsually as good as in summer; tires are rather more likely to be underinflated; and, altogether, the battery has quite a little assistance when it comes to pulling down the mileage of an electric car during the winter months.

### The Dangerous Time for Novices.

It is an old story, but one that is new to each new crop of drivers, that the most dangerous time for the novice in automobile handling is just when he first feels that he has mastered the machine and that he has nothing to fear from it; that, after all, it's an easy thing to manage and that he is equal to any emergency. Shortly after that, if his confidence overcomes his cautiton, he will have his first real fright or his first accident-chance will decide which-and lose some of his cocksureness. Then he will be on the way to be a good driver, and not before, unless he treats the "know-it-all" feeling with the contempt it deserves.



1,075,688. Spring-Wheel. Henry Boardman, Des Moines, Ia. Filed March 29, 1913. Serial No. 757,680. (Wheel with spring tire.) 2 claims.

1,075,717. Wheel Structure. Roderick Macrae, Chicago, Ill. Filed Feb. 26, 1912. Serial No. 680, 996. (Disk wheel with internal electric motor and driving gears.) 6 claims.

1,075,779. Automobile Truck. Dwight Gerber, Bellevue, Pa., assignor of one-half to William W. Keefer, Pittsburgh, Pa. Filed Aug. 22, 1912. Serial No. 716,369. (Conveyor system for motor truck.) 22 claims.

1.075,801. Tire-Rack. Beverly L. Waters, Aurora, Ill., assignor to Lyon Metallic Mfg. Co., Aurora, Ill., a corporation of Illinois. Filed Jan. 0, 1913. Serial No. 745,103. (Adjustable tire holder.) 3 claims.

1,075,816. Automobile. Lembert W. Coppock, Decatur, Ind. Filed June 8, 1911. Serial No. 631,894. (Hinged radiator.) 2 claims.

1,075,838. Spring Wheel. William L. Mann, St. Joseph, Mo. Filed May , 1911. Serial No. 624,756. (Wheel with looped spring spokes.) 1 claim.

1,075,847. Spark Controller for Explosive Engines. Albert Louis Moeller, Mishicott, Wis. Filed March 18, 1911. Serial No. 615,229. (Makeand-break ignition system.) 1 claim.

1,05,901. Shock Absorber. Cary W. Crawford, Los Angeles, Cal. Filed Nov. 13, 1912. Serial No. 731,126. (Auxiliary spring stock absorber.) 2 claims.

1,075,915. Window-Cleaning Attachment for Automobile Windshields and the Like. Vernon T. Houghton, Washington, D. C. Filed May 15, 1913. Serial No. 767,854. (Rotary cleaner for windshield, operated by flexible shaft.) 8 claims.

1,075,917. Adjustable Shoe for Auto-Tires. Walter A. Jackson and Edward L. Shernbondy, Los Angeles, Cal. ,assignors of one-third to Geo. W. Eno, Los Angeles, Cal. Filed Feb. 14, 1912. Serial No. 677,603. (Tire with steel cable fastening.) 1 claim.

1,075,951. Swivel Lamp Holder. Charles N. Snowden, Guantanamo, Cuba. Filed Nov. 1, 1912. Serial No. 728,976. (Headlight turning with steering gear.) 4 claims.

1,075,962. Engine. Frank E. Cain, Detroit, Mich. riled July 5, 1912. Serial No. 707,686. (Overhead rotary valve.) 7 claims.

1,075,974. Double Ignition System for Internal Combustion Engines. Dow B. Hughes, Cleveland, O., assignor, by direct and mesne assignments, to The Citizens Savings and Trust Co., trustee, Cleveland, O., a corporation of Ohio. Filed Nov. 20, 1909. Serial No. 529,019. (Ignition system with generator having separately excited fields and automatically governer switch.) 4 claims.

1,075,975. Engine Starter. John Hume, Houston, Tex. Filed July 10, 1911. Serial No. 637,800. (Compressed air starter.) 2 claims.

1,075,993. Vehicle Tire. Arthur W. Savage, Duarte, Cal. Filed June 21, 1911. Serial No. 634,-559. (Tire with detachable tread.) 4 claims.

1.076,003. Spring Wheel. Wesson J. Cook and Pardon Cook, Albany, N. Y. Filed June 2, 1911. Serial No. 630,770. Renewed Feb. 6, 1913. Serial No. 746,667. (Double-rim wheel with springs between rims.) 1 claim.

1,076,024. Cushion Tire. Charles M. Culp, South Bend, Ind. Filed March 15, 1912. Serial No. 683,919. (Cellular tire.) 2 claims.

1,076,042. Cushioning Device for Automobiles and Like Vehicles. Frederick O. Kilgore, Somerville, Mass. Filed Jan. 10, 1910. Serial No. 537, 163. (Air-cushion shock absorber.) 4 claims.

1,076,052. Worm Drive for Motor Vehicles.

Walter S. Morton, Harrisburg, Pa. Filed Oct. 8, 1912. Serial No. 724,670. (Four-wheel drive with worm gearing.) 5 claims.

1,076,056. Spring Equalizer System. William Wirt Pitts, Austin, Tex., assignor of one-fourth to Clara M. Pitts and one-fourth to Jennie M. Pitts, Austin, Tex. Filed Sept. 5, 1912. Serial No. 718,688. (Leaf springs with equalizing levers.) 5 claims.

'1,076,090. Internal Combustion Engine. William J. Wright, Franklin, Pa., assignor to Wright Engine Co., Pittsburgh, Pa., a corporation of Delaware. Filed April 10, 1911, Serial No. 620,071. Renewed March 14, 1913. Serial No. 754,356. (Compound engine.) 9 claims.

1,076,100. Brake Operating Apparatus. Edwin K. Conover, Paterson, N. J., assignor to Conover Motor Car Co., Paterson, N. J., a corporation of New Jersey. Filed April 16, 1907. Serial No. 368569. (Power-operated brake.) 2 claims.

1,076,104. Fire-Ladder Truck. Albert D. Crossley, Hartford, Conn., assignor of one-fourth to John J. Harty, Kingston, Ontario, Canada, and one-fourth to William P. O'Brien, Montreal, Quebec, Canada. Filed March 17, 1913. Serial No. 73,1911. (Motor-driven extension ladder.) 7 claims.

1,076,115. Radiator-Cell Structure. Herbert Champion Harrison, Lockport, N. Y., assignor to Harrison Mfg. Co., Inc., Lockport, N. Y., a corporation of New York. Filed Nov. 1, 1912. Serial No. 729,117. (Cellular radiator of sheet metal construction.) 5 claims.

1,076,120. Starting Device for Explosive Engines. John O. Hobbs, Chicago, Ill. Filed Dec. 27, 1911. Serial No. 668,114. (Compressed air starter.) 8 claims.

1,076,127. Automobile Tire. Charles Krikava, Burchard, Neb. Filed May 20, 1913. Serial No. 768,807. (Tire with edges locked in rin.) I claim.

1,076,132. Driving Mechanism for Vehicles. Robert C. Mangum, Washington, D. C. Filed June 11, 1912. Serial No. 703,048. (Friction drive system.) 4 claims.

1,076,152. Vehicle Chock. Frank Rode, Jeannette borough, Pa. Filed March 26, 1913. Serial No. 756,908. (Sheet steel wheel-chocks.) 2 claims.

1,076,155. Friction Transmission Mechanism. L. D. Ryan, Cortland, N. Y. Filed Nov. 20, 1912. Serial No. 732,522. (Friction transmission system with equalizing disks.) 2 claims.

1,076,165. Means for Operating Doors of Vehicles. William M. Simmons, Burlington, Ia. Filed Aug. 30, 1912. Serial No. 717,983. (Means for unlocking car door when brake is applied and locking it when brake is released.) 7 claims.

1,076,170. Lamp Supporting and Operating Means. James D. Stow, Springfield, Mass. Filed Jan. 20, 1913. Serial No. 743,038. (Headlights swung with movement of steering gear.) 2

1,076,172. Explosive Engine. James Todd, Sewickley, Pa. Filed March 30, 1903. Serial No. 150,108. (Compressed air starter and air-compressing means operated by motor.) 15 claims.

1,076,198. Vacuum Brake. James T. Dickson, Los Angeles, Cal. Filed Aug. 7, 1912. Scrias No. 713,896. (Brake operated by vacuum in intake pipe when throttle is closed.) 7 claims.

1,076,203. Radiator. George E. Farlinger, Detroit, Mich., assigned to Anguish Mfg. Co., Detroit, Mich., a corporation of Michigan. Filed Feb. 23, 1912. Serial No. 679,240. (Radiator formed of pairs of plates connected by integral ferrules.) 2 claims.

1,076206. Lever Mechanism for Gear-Shofting. Charles W. Gerbart, Mount Holly Springs, Pa. Filed May 11, 1912. Serial No. 696,769. (Gearand clutch-operating system.) 1 claim.

1,076,226. Dash-Lock for Automobile Clocks. Wilson E. Porter, New Haven, Conn., assignor to New Haven Clyock Co., New Haven, Conn., a corporation. Filed March 19, 1913. Serial No. 755,541. (Means for attaching clock to dash-board.) 2 claims.

1,076,238. Detachable Rim for Vehicle Wheela. Adolph Schick, Wheeling, W. Va., assignor to Schick Wheel & Tire Co., a corporation of West Virginia. Filed Aug. 2, 1912. Serial No. 717,399. (Quick detachable rim with wedging rings and bolts.) 3 claims.

1,076,239. Vehicle Wheel. Adolph Schick, Wheeling, W. Va., assignor to Schick Wheel & Tire Co., a corporation of West Virginia. Filed Aug. 27, 1912. Serial No. 717,400. (Wheel with helical spring spokes.) 4 claims.

1,076,254. Resilient Wheel. Walter Wheeler, Des Moines, Ia. Filed June 6, 1913. Serial No. 772,083. (Wheel with radial helical springs.) 4 claims.

1,076,255. Vehicle Wheel. Edmund H. Whiting. Providence, R. I. Filed March 3, 1913. Serial No. 751,970. (Wheel with cushioned hub.) 2 claims.

1,076,326. Piston for Engines. George T. Strite, Minneapolis, Minn. Filed Nov. 14, 1912. Serial No. 731,341. (Piston with detachable bearings for piston pin.) 3 claims.

1,076,345. Tire Shoe. Arthur S. Bullock, Aitkin, Minn. Filed April 13, 1912. Serial No. 690-529. (Non-skid band and attaching means.) I claim.

1.076,365. Automobile Jack. Charles A. Hart, Findlay, Ohio. Filed April 5, 1912. Serial No. 688,659. (Two jacks simultaneously operated.) 3 claims.

1,076,380. Internal Combustion Engine. Chas. F. Lembke, Valparaiso, Ind. Filed Feb. 6, 1912. Serial No. 675,705. (Piston valve motor.) 1

1,06,402. Dirigible Headlight. Frank H. Aubeuf, Oneida, N. Y., assignor of one-half to Frank J. Aubeuf, Oneida, N. Y. Filed Sept. 29, 1919. Serial No. 788,001. (Headlights turning with steering gear.) 7 claims.

1,076,414. Vehicle Spring. Jeff Frosig and Lee W. Walstrom, Reno, Nev. Filed Nov. 18, 1912. Serial No. 732,103. (Pivoted spring mounting.) 2 claims. ᅦ

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1,076,415. Mounting of Engines in Motor Cara. William H. Frost, Erie, Pa., assignor to General Electric Co., a corporation of New York. Filed April 27, 1912. Serial No. 693,612. (Motor mounting for gasolene railroad cars.) 8 claims.

1,076,427. Testing Installation for Electro-Magnetically-Operated Sparking Plugs. Gottlob Honold, Stuttgart, Germany. Filed Feb. 12, 1908. Serial No. 415,482. (Short-circuiter for magnetic spark plugs.) 5 claims.

1,076,430. Demountable Rim. Wilton Ford Jenkins, Richmond, Va. Filed Oct. 7, 1912. Serial No. 724,315. (Split demountable rim with lug fastenings.) 1 claim.

1,076,436. Fuel Pump for Internal Combustion Engines. Hermann Lemp, Lynn, Mass., assignor to General Electric Co., a corporation of New York. Filed Feb. 9, 1912. Serial No. 676,528. (Governed fuel pump for injection type motors.) 6 claims.

1,076,443. Signaling Device for Automobiles Harvey P. Noble, Philadelphia, Pa., assignor of one-half to Edwin G. Ott, Philadelphia, Pa. Filed March 29, 1912. Serial No. 687,041. (Direction signal combined with lamp.) 3 claims.

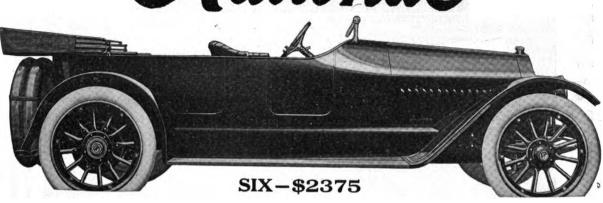
1,076,502. Pump for Supplying Fuel to Internal Combustion Engines. Hermann Lemp, Lynn, Mass., assignor to General Electric Co., a corporation of New York. Filed Feb. 10, 1912. Serial No. 676,744. (Governed fuel pump for injection type motors.) 9 claims.

1,076,513. Oiling Attachment for the Axles of Resilient Wheels. Al Nelson, Ripley, Tenn. Filed Nov. 12, 1912. Serial No. 730,987. (Oil pump operated by movement of wheel on springs.) 5 claims.

1,076,535. Spark Plug for Explosive Engines. Frank C. Walsh, Cleveland, O., assignor to The Sharp Spark Plug Co., Cleveland, O., a corporation of Ohio. Filed Oct. 28, 1911. Serial No. 657,268. (Clamping means for porcelain spark plugs.) 2 claims.

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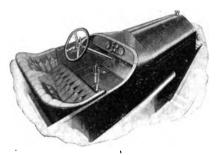


## The Winning Line of Cars

E VERY dealer and every motorist in the country have been waiting for the right Six-and here it is. They've wanted a Six selling at the right price—they've wanted a Six built by a manufacturer with years of experience-and a reputation for building a reliable product of the highest quality. That's just what this new National Six is -the right Six at the right pricebacked by the quality, faith, integrity and honesty of product that have made the National car world-The National Company were the first builders of successful 6-cylinder cars, making their first in 1905.

This new National is nothing short of a marvel. Beautiful, powerful, efficient, economical and, in fact, the climax of the National's success in car making since its pioneer beginning. It embodies all the National's internationally recognized principles of superiority. No other manufacturer has ever built its equal.





This shows the beautiful, graceful lines of the cowl and hood of new National Six; instrument board, with everything convenient; control levers in center; left side drive; access to both front





National Six, Three Passenger Coupe

To see this new car is to desire it - to ride in it once is to determine to postess it.

### First to improve European styles

Other makers have imitated the styles originated in Europe-but the National improves these advanced foreign designs. Nothing obstructs or spoils the continuous beauty of the long body lines. Both sides gradually converge toward the narrowed radiator, giving the whole car an briginal appearance and a "pointed" style. Smart slope from cowl to radiator.

### Brief Specifications-National Six

Motor, six-cylinder, 334x5½-inch, cast en bloc. Tire pump, integral part of motor. Clutch, self-contained aluminum cone. Starting and lighting, electric two unit system. Transmission, eliding gear selective two unit system. Transmission, eliding gear selective type, three speeds forward, one reverse. Gauge 56 inches. Olling, crank case constant level, force feed, with gear driven pump. Ignition, high tension, dual magneto with storage battery. Tires, 36x4½. Firestone demountable rims. Air pressure gasoline feed, generated by small pump in crank case. Capacity 23 gallons. Automatic carburetor. Two sets of braces on 16-inch rear wheel drums. Bevel gear drive through straight line shaft with universal joints and torsion member. Full floating rear axle. Left side drive. Access all four wide doors. Single springs, front, special National cantilever construction, rear.

Equipment:—Top complete with side curtains and boot, ventilating rain vision wind shield, extra Firestone rim, electric lighting and starting sys-tems, 12-inch double bulb electric headlights, elec-tric license tail light, Warner speedometer, elec-tric horn, tools and jack.



National 40, Two Passenger Speedway Roadster

NATIONAL MOTOR VEHICLE CO., Indianapolis, Ind., U. S. A.



## An Unusual Price An Unusual Car

Every feature you want in a car is standard with this Path-finder Six.

More dealers were attracted to this car at the National Shows than any car we have ever exhibited.

The Pathfinder high-standard construction is continued.

The price is decidedly popular.

You should write immediately for the agency in your territory.

Our New Plan for Selling Automobiles insures you a permanently profitable business.

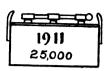
Get the details of car and plan today.

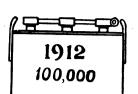
THE MOTOR CAR MFG. COMPANY
1138 DIVISION ST., INDIANAPOLIS, U.S.A.

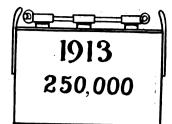












## Storage Batteries

The above shows the <u>actual proportion</u> of sales of Batteries during the past five years.

The remarkable growth indicated was in no way accidental.

It is due to the fact that the **CERA** was the <u>first in the field</u>—its manufacturers the <u>first</u> to realize the <u>need of an efficient, reliable</u> source of energy for the lighting and starting equipment of gasoline cars.

The state anticipated every requirement of this service and was built sturdy and strong enough to withstand abuse and with real brains to meet every demand of the most exacting engineer.

The crass anticipated troubles only to eliminate them and, today, no part of the automobile has reached so high a state of efficiency and none adds so greatly to the user's pleasure and convenience as the Storage Battery in conjunction with a good Electric Lighting and Starting System.

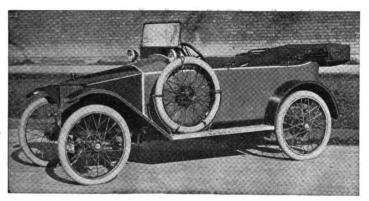
### WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd St. Detroit Branch: 736, 738 and 740 Woodward Ave. San Francisco Branch: 243 Monadnock Bldg. Indianapolis Branch: 438 and 439 Indiana Pythian Bldg.

Chicago Branch: 2241 Michigan Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

### KEETON AND CAR-NATION CENTER OF ATTENTION AT THE CHICAGO SHOW



### \$520

### 4 Passenger CAR-NATION Touring Car

### **\$520**

### CAR-NATION SPECIFICATIONS

Unit Power Plant—Motor—4 cyl. en bloc, 3½ x 3¼, "L" head—large valves and bearings. Very quiet and powerful. Ignition—Magmeto—Fixed Spark. Librication—Constant Level Splash—Plunger

Pump.

Carbureter—Approved Type—very economical Cooling—Thermo-Syphon. V-shaped radiator, adjustable belt-driven fan.

Clutch—Multiple steel disk type running in oil.

Transmission—Selective type 3 speeds forward and revers—One lever control.

Drive—Bevel gear through concentric Torque tube with one universal joint.

Rear Axle—Semi-Floating Type, Hyatt Roller Bearings.

#### PRICES

Model A-2 passenger Roadster	. \$495.00
Model B-2 passenger Tandem Type.	. 510.00
Model C-4 passenger Touring Car	. 520.00
Extra Equipment: Top \$25-Windshie	ld \$10.00

### "CAR-NATION"

### "The Car for the Nation"

The Car-Nation is just what the name implies-the car for the nation. The price brings it within the reach of the great majority-its appearance appeals to the man who is a discriminating buyer-its mechanical construction and economy in use assure a lasting endurance and low cost of upkeep.

The Car-Nation is more than a cyclecar; that is, it has all the good points of a cyclecar; light weight, snap, low initial and upkeep cost, etc., in addition to having all the standard tried and proven features of the high

Brakes—Emergency, Internal Exp. on 10 in drum on reast wheels. Service, external contracting on transmission shalt.

Wheels—Detachasmission shalt.

Wheels—Detachasmission shalt.

Control—L. H. drive center control.

Wheel Base—104 inches.

Tread—48 inches.

Standard Equipment—Horn—Head Lamps and Tail Lamp, with set of tools.

The small car is here to stay; a glance at the Car-Nation booth in the First Regiment Armory at the Chicago Automobile Show would Chicago Automobile Show, would have convinced the most skeptical. Wise dealers will cash in on this widespread interest by getting in touch with us at once.

### A Harmony in Motion

You cannot fully realize the meaning of the phrase "Harmony in Motion" until you have a ride in the new "Six-48" Keeton.

All the working parts perform their duties in a quiet and business - like manner that is the most convincing proof of the excellence of the mechanical construction.

The quiet elegance of the color combinations, which seem to be peculiarly adapted to the French type of construction, attracts the attention of the most fastidious buyers.

Dealers who are looking for a car that embodies the best ideas of Europe with the economical prices of America will get in touch with us at



### KEETON SPECIFICATIONS

MEETON SPECIFICATIONS

Motor—Six cylinder, 4 in. bore, 5 in. stroke, cast en bloc, "L" head.
Ignition—Eisemann Dual High Tension Magneto, Automatic Spair Advance.
Electric Starting-Lighting — "Jesco" Starting and Lighting System, single unit type.
Cooling—Centrifugal ump and powerful flywheel an insure ame cooling.
Front Axle—Elliott type, ball thrust bearing, in yoke head.
Rear Axle—Full floating type, gear ratio 3½ to 1. Imported annular bearings.
Brakes—Brakes cam actuated internal expanding, large diameter.
Control—Left side drive, right hand control. Steering—Worm and full Gear Type with thrust bearings, 18 in. or 20 in. walnut wheel.
Clutch—Cone shaped steel disks running in oil and housed in fly wheel.

Transmission—Selective type, 4 speeds forward and reverse, direct on third, imported bearings.

Wheels—Five interchangeable wire wheels, 34 in. in diameter, 4½ in. tires.

Speedometer—Warner Autometer with clock combination. combination

combination.

Horn—Klaxon.

Tire Pump—Mechanically operated, two-cylinder compressor.

Wheel Base—136 inches.

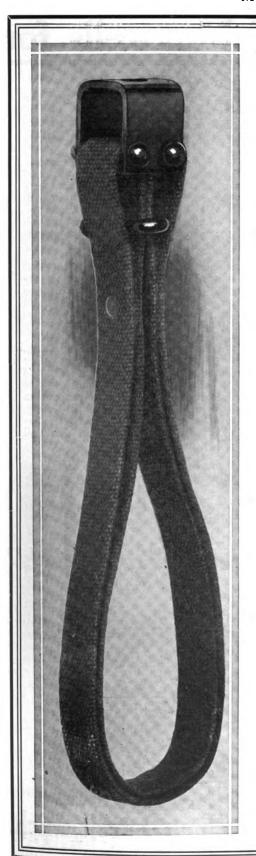
Equipment especially detailed and complete.

PRICES-F. O. B. DETROIT

2 Passenger Roadster, completely equipped
7 Passenger Touring Car, completely 

Write for the "Triple Test" Booklet

Manufactured by The American Voiturette Co., Detroit, U. S. A.



## Ghe Gilmer Rebound Strap

So long as a spring keeps its normal position there is no danger of breakage. Even when it is depressed by unusual weight there is no danger.

Still there is no danger even when the depression is sharp—such as results from the wheels encountering an obstruction or sunken place in the roadway.

In fact, not the slightest danger from broken springs can come on the rebound UNTIL the rebound pulls the spring up beyond its normal shape.

Then is when rebound straps are vital—for safety. There are no degrees of safety—nearly saved is nothing. Gilmer Rebound Straps are strong enough to insure ABSOLUTE SAFETY—and the best cars use no other.

## L. H. Gilmer Co.

52 North Seventh Street PHILADELPHIA, PA.

# Second Trainload of Maxwells for the South in One Week

"Another trainload for Dixie, and the second in a week," announced Sales Manager Redden, as he jubilantly waved a telegram he had received from "Bunny" Burwell, of Charlotte, N. C. "An even hundred Model '25's'; 24 '35's' and 6 Maxwell '50-6's' at one wallop—that's some order," said Sales Manager, "and they call this hard times."

"Herbert N. Casson in a recent address said, 'The North is acquiring sentiment and the South is getting rich.'

"This second trainload order in a week certainly bears out half of his statement—that the South is getting rich.

"Of course the South always did have sentiment and romance but it is only of late that automobiles have been going in large quantities south of Mason and Dixon Line.

"Maxwell cars have always been popular in the South, and yet it came somewhat as a surprise to me when, at a recent little luncheon given his dealers by Charles Booth, our District Manager at Atlanta, one of the dealers got up and with a few 'well chosen words,' handed me an order for a trainload of Maxwells to be shipped forthwith.

"Needless to say, I was speechless, as befits such an occasion, but I did manage to gasp 'accepted and

will be shipped immediately.' That trainload, consisting of 44 big 50-ft. freight cars, arrived in Atlanta Monday morning. The dealers were there waiting for them, and they disappeared so rapidly—a carload here, four carloads there, two to another point, that Booth wired me the following day, 'How soon can Atlanta have another trainload?'

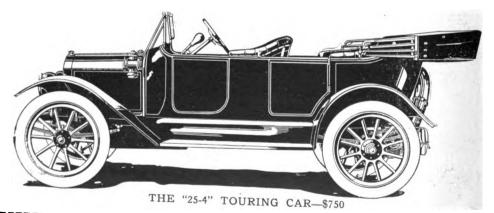
"Bunny" Burwell, who is one of the most successful dealers in the Carolinas, heard about the Atlanta trainload, and fearing there would not be enough left to go around, took the first train North so as to personally conduct the order to the factory.

'Of course the weather favors them in the South, but while we are talking about hard times (let's see, was that what we were talking about) let's not forget Minneapolis, which is enjoying the extreme degree of cold, yet has maintained its supremacy over all other points. C. R. Newby, Maxwell District Manager at Minneapolis, has continued to take more than his quota of cars all winter—in fact, he leads the bunch."

Continuing, the sales manager said in ministerial tones, "and what moral may we draw from this my brethren?"

"The moral is that neither cold nor stringency of the money market can stop a good car.

## "All's Well With the Maxwell"



MAXWELL MOTOR COMPANY., Inc., Detroit, Mich.

Dealers and Service Everywhere



A certain car has engine dimensions nearly as follows:

Cylinders - - Four
Bore - - 4 Inches
Stroke - - 4 3-4 Inches

The starter has a complicated differential gear and chain reduction and weighs with gearing approximately 45 pounds. With the engine cold the starter turns the crankshaft at 72 r. p. m., using 130 amperes from a little 80 ampere hour battery. (Faint cries of "murder!" from the battery maker.)

## The RUSHMORE STARTER

### MODEL C

weighing but 30 pounds, would spin that engine cold at fully

### 150 r. p. m.

using 100 amperes instead of 130. And by eliminating the power-wasting differential gear, roller clutch and chain, the operation would be quiet where it is now very noisy.

By using a lower gear and increasing the current consumption to 130 amperes, the speed would become

### 190 r. p. m.

or 2.6 times as fast as the present starter for equal current; yet the Rushmore outfit weighs but one-half as much.

By using a lighter winding on the Rushmore Starter the speed and current would become 100 r. p. m. and 70 amperes. Installing a Rushmore Dynamo with the present 80 ampere hour battery, the saving in cost on the entire equipment, for better results in every way, would be fully \$25.00 per car. Multiply this by tens of thousands of cars, and think what just one manufacturer is losing!

Yet the starter now used on the above car is far from being either the poorest or the most expensive of its kind.

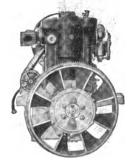
The Rushmore Starting and Lighting System has been adopted as factory equipment on the following cars:

SIMPLEX MERCER

LANCIA ALCO

STAFFORD KLINE KNOX REGAL CRANE S & M

It is also regular equipment in America on: Mercedes, DeDion-Bouton, Isotta Fraschini, Austrian Daimler, Delaunay-Belleville.



End View of Simplex Engine with Model C Starter.

RUSHMORE DYNAMO WORKS Plainfield, N.J.

## er Life to and Frame

Do you realize what this What a dollars and cents saving it spells in eliminating repair-bills, in retarding depreciation, in reducing upkeep expense?

Your springs have much to do with the life of your car.

If they are too stiff, too unyielding, the vibration racks the engine, gets parts out of adjustment and alignment, and soon sends the motor to the repair shop.



A single defect may mean a breakdown at a critical time.

Cleveland - Canton Chrome - Vanadium Springs put an end to such troubles. They possess a remarkable combination of tensile strength, elasticity and anti-fatigue properties.

### Cross-Rolled Chrome-Vanadium

"Not a Bump In One of Them"



Built for Life-Long Endurance"

In cross-rolling science has reached the ultimate in steel-making for automobile

springs.

The steel is rolled both cross-wise and lengthwise, instead of longitudinally only. So the result is a homogeneous, tough, resilient steel, free from blow-holes or flaws. Heat-treated in oil, as we treat them,

then fitted painstakingly by hand, and you have an ideal motor-spring.

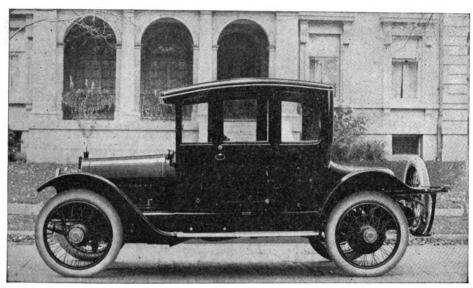
You can rely on Cleveland-Canton Chrome-Vanadium Springs in any emergency. They never break down unexpectedly. They absorb shocks and jars and save the engine. They are cheapest in the long run. Write for full details today.

Best Grade - Chrome-Vanadium Next Best-Special Analysis



The Cleveland - Canton Spring Co. Canton, Ohio, U. S. A.

## A New Stearns-Knight Closed Car



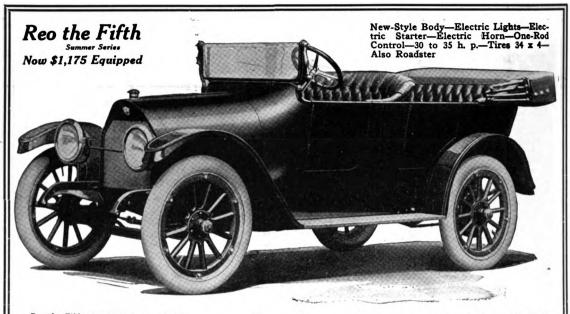
Stearns-Knight Four-Cylinder Coupe (Wire Wheels Extra)

THE Stearns-Knight Coupe—one of the four new body types added this season—combines the luxury and comfort of the Limousine with the convenience and adaptability of the Roadster. Its beautiful lines and finish and exquisite interior treatment, combined with the smoothness, flexibility and unfailing reliability of Stearns-Knight chassis construction, adapt it alike to social purposes and every-day use about town. With the Sedan—another new closed body added this year—it rounds out to completeness the Stearns-Knight line of luxurious closed cars.

Prices: Four-cylinder \$4450.00, Six-cylinder \$5550.00.
Other Models \$3750 to \$6200

Catalog upon request.

THE F. B. STEARNS COMPANY CLEVELAND, OHIO



Reo the Fifth appeals to men who are buying a car to keep. Lesser-built cars may run as wepl at the start. Even for months they may perform about as well as this.

It is the second season, and afterward, when the difference in cars stands out. Then you will know why Mr. Olds insists on his extremes.

### A Long-Time Car

Every part in Reo the Fifth is based on 27 years of experience. Legions of men have put Oldsbuilt cars to every possible strain and test. And no man knows better than Mr. Olds the margins of safety needed.

All steel is made to formula, and each lot is analyzed twice. All driving parts are given 50 per cent. over-capacity.

Gears are tested in a crushing machine for 75,000 pounds per tooth. Springs are tested for 100,-000 vibrations. Each engine gets five long-continued tests. Each is run for many hours, then taken apart and inspected.

Reo the Fifth has 15 roller bearings. It has 190 drop forgings where steel castings might have flaws. It is built slowly and carefully, with countless tests and inspections. The close-fitting parts are ground over and over.

The extremes we employ add 20 per cent to the necessary cost of this car. But the result is a car which, for years and years, continues to run like new. An almost trouble-proof car. A safe, staunch car. A car with small cost of up-keep. Men are coming, more and more, to want a car like this.

## Almost the Last Word In This Class of Car

The Chassis is the final achievement of Mr. R. E. Olds, the dean of all designers. It embodies all of his costly extremes, his care and skill and caution. It marks the utmost in an honest car.

The New Body—this streamline body—is the coming vogue. Europe has adopted it on all her leading cars. And there, where body styles originate, these flowing lines are considered finality.

The Equipment includes all that motorists desire.

The Price this season drops \$220, for reasons stated below. There is no probability that an equal car can ever be built for less.

So this year's Reo the Fifth, in all respects, approaches the limit for this class of car.

### Classiness

We give equal attention to comfort and beauty. This streamline body follows the lead of the finest cars of the day. No break at the dash, no projecting hinges. The finish is perfection. All possible parts are enameled. The upholstering is of genuine leather, deep and soft. You will hardy find at any price a more luxurious

### Equipment

All instruments and gauges are now flush with the dash, and all within reach of the driver. The car comes equipped with the best electric starter we know. All lights are electric, the searchlights have dimming attachment. There is an electric horn, an extra rim, a speedometer, a new tire carrier on the back which holds the tail light and the number.

. The windshield is part of the body. It is rain-vision and ventilating.

Then this car alone has our onerod control. All the gear shifting is done with one small center rod, set out of the way. It is done by moving this rod only three inches in each of four directions.

No levers, side or center nothing in the driver's way. Both brakes are operated by foot pedals. You never saw such simple control.

### Now \$220 Less

And this year the price drops to \$1,175, with all this complete equipment. Last year's model sold for \$1,395 with electric starter and lights.

There has been some saving in electric equipment, and a lowered cost for tires. But the main saving comes through confining our output to this single chassis for years. All our cost for machinery, tools and jigs has been charged against previous output. From this time on our factory cost is simply the cost of making.

That was what we aimed at three years ago in adopting this final chassis. We have aimed to save you all that changes cost in machinery and equipment. After three years of enormous output this end has been accomplished. Our machinery cost is all wiped out, and we give you the entire saving.

We have dealers in a thousand towns. Ask us for name of nearest one. Also for new catalog.

### Reo Motor Car Company

Lansing, Michigan

Canadian Factory, St. Catharines, Ont. Canadian Price, \$1,575

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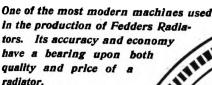
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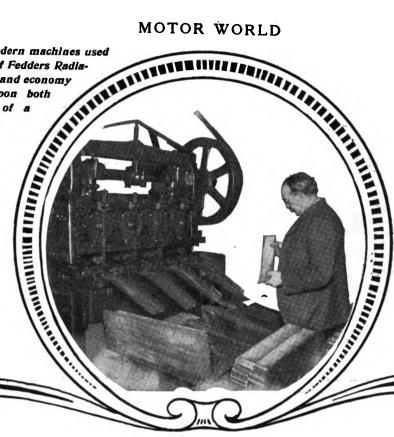
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## Experience

\*XPERIENCE is the best teacher. The concern which has this in their favor is bound to make a better product than another, everything else being equal. Experience has directed the energy and enthusiasm of the Fedders Organization. Development of what in late years has come to be regarded by engineers as the most perfect product of its kind in the world.

EDDERS

DIATORS

For years Fedders Radiators have been standard equip-ment on many high grade American cars.

So satisfactory has been their service that the car manufacturers who once equip their cars with Fedders Radiators seldom

change to any other. They know that the Fedders organiza-

tion is progressive and painstaking in all their activities. They know that the radiators on each succeeding series of cars are better than on

the previous se ries - so much does experience mean in the development of automobile parts especially radiators. Fedders Radiators owe their enviable reputation for quality and effi-

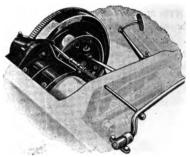
much to the fact that they are the out-growth of sixteen years' progressive experience in the manufacture. growth of sixteen years' progressive experience in the manufacture of this one product as to the fact that only

the highest grade materials are used in their

## FEDDERS MANUFACTURING CO.

Buffalo, N. Y.

## The Most Efficient of all Starters



### What We Do to Maintain Service

7E operate 63 Service Stations situated in the principal automobile centers. These stations are for the sole purpose of giving advice and lending aid to Gray & Davis users.

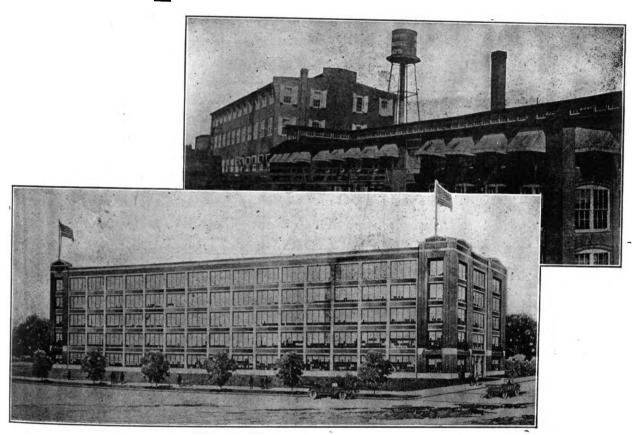
Our Service Manager does nothing else but supervise these stations. business is to see that every user of the Gray & Davis system secures the service to which he or she is entitled.

In other words, service and satisfaction are part of the Gray & Davis system and one of the many reasons why this equipment enjoys its distinctive position in the automobile industry.

Send for Catalog =

GRAY & DAVIS, Inc.

# These Factories Mean Prompt Deliveries—



## Service, the Vital Factor

HE car owner is entitled to service. If the owner does not secure maximum efficiency, discontent follows.

Service is the big thing today---especially in electric equipment.

When you can tell a prospective purchaser that Gray & Davis consider it their duty to see that every G. & D. system gives satisfactory service---

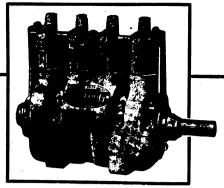
You have the best sales argument available.

Correct electrical practice properly applied, the finest material and exhaustive tests, make for efficiency, but service insures reliability and gives an element of satisfaction that is to be found in the Gray & Davis system.

Write for Catalog

Boston—Mass

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## AT THE AUTOMOBILE SHOWS

As Well as Wherever Else Shown

## KELL OG Tire Pump

Has Proved to Manufacturer, Dealer and Car Owner to be the STANDARD POWER DRIVEN TIRE PUMP

You must base your judgment as to the practical quality back of this necessary device by the confidence reposed in it by the manufacturers noted on this page. They are representative makers of the best and most dependable types of motor cars on the market.

### A STRONG GUARANTEE

These manufacturers make practically all of the parts of their cars themselves, and in using the KELLOGG PUMP as equipment, they must acknowledge it to be in 'quality keeping' with other portions of their equipment, as well as of the cars themselves.

### YOU CAN HAVE IT

Every car owner should insist upon the KELLOGG PUMP on his car. You are entitled to it. Your dealer can see that you get it. You know how convenient it is to be able to simply throw on the pump, attach a tube to your tire and watch your gauge. These simple operations are all that is necessary with the KELLOGG equipment. Therefore, insist upon this tire pump. We have a complete list of attachments for equipping practically every car built.

To get the details, send for our booklet

We are rapidly establishing a chain of Servici. Stations reaching from coast to coast which will shortly be at your disposal in sorry important city-by Sammer time

FOLLOW THE LEAD OF THE MAN WHO KNOWS

Write for our Interesting Literature, Dept. "W."

## KELLOGG MFG. COMPANY, Rochester, N. Y.

NEW YORK 1733 Broadway

CHICAGO 1112 South Michigan Avenue



USED ON THE

FOLLOWING CARS:

Packard

**Peerless** 

Franklin

Winton

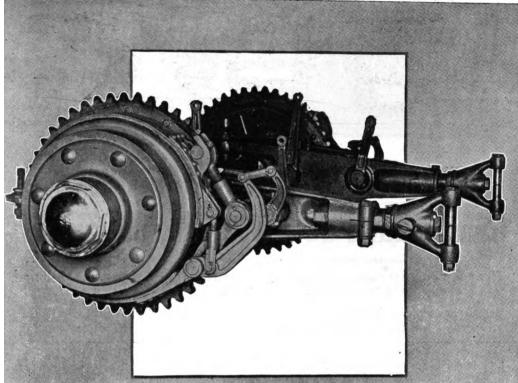
Havers

Stearns Imperial Jackson Chandler

Garford

Lozier Stevens-Duryea Chalmers

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## The BRAKES BELONG on the HEELS-NOT on the JACK-SHAFT

## Sheldon Double-Brakes-On-The-Rear-Wheels

Has sounded the death-knell of the jackshaft method of braking. It spells finality as to the location of the brakes because it puts them in the only logically correct position—ON THE WHEELS.

SHELDON EQUIPMENT gives you two sets of brakes on the rear wheels. There is always certainty as to the braking efficiency—which is not true of jackshaft brakes. Suppose with your present method, the chains should "jump off" at the critical moment? Could you depend on your single set of rear wheel brakes skidding the wheels?

Take our 3-ton equipment as an efficient example. The outside brake is of the wrap-up type acting on the 18-in. by 3-in. pressed steel drum. The inside brake is of the self-intensifying type. Either brake will skid the wheels. You can take your choice of foot or hand brake. There is a braking surface of 500 square inches. To stop a 3-ton truck with 50 per cent. overload means applying only 200 pounds pressure per square inch to the braking surfaces. On many trucks the pressure runs as high as 700 pounds per square inch. The self-intensifying feature of Sheldon Brakes gives a uniform pressure on the whole surface of the drum. This is not the case with any other type of brake. other type of brake.

Can you wonder that ordinary brakes fail to hold at the critical moment?

IN A YEAR OR TWO EVERY HIGH-GRADE TRUCK WILL BE EQUIPPED WITH BRAKES ON THE REAR WHEELS. JACKSHAFT BRAKES ARE ALREADY DOOMED! THE LEADING TRUCKS ARE COMING TO DOUBLE-BRAKE REAR WHEEL EQUIP-

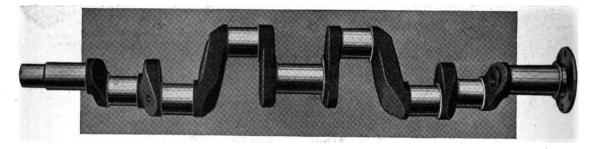
Why not make your truck one of the leaders? It'll be a selling point in your favor. Write us for information on this subject-today.

## SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

Chicago Office:

San Francisco Office:

Detroit Office: 1215 Woodward Avenue



# When it comes to Finishing Crankshafts deal with Headquarters

There is no mystery about machining crankshafts. The path seems straight. The operations mechanical. The chance for variations slight.

Yet, it is common knowledge that two concerns, working from exactly the same blue-prints, under duplicate instructions, will produce varying results.

Delays of a serious nature, retarding production, causing loss of time, losses of stock and losses of money are not unknown.

Competition is eager; promises are many, but—promises don't make crank-shafts; don't help production; don't stop losses; don't satisfy.

That's why we urge you to come to headquarters for finishing crankshafts. We specialize on finishing crankshafts—do nothing else—and are pioneers in the business.

Experience, "know how" and splendid equipment are at your service when you deal with us. We make deliveries according to schedule—no excuses, no failures. Our percentage of rejects HAS NEVER GONE ABOVE TWO PER CENT.—has frequently been below that.

Low overhead enables us to make right prices. Shipping facilities are excellent.

Business will soon open up with a rush. You will want crankshafts finished and want them quick. Better get in touch with us now while there is still a chance to avail yourselves of Michigan Service.





2 Tons

5 Tons

We announce the addition of two models of Kelly trucks—capacities 2 and 5 tons.

These new models round out what many experts pronounce the best line of motor trucks on the market today.

Our improved 1 and 3½ ton models, which were announced a little more than a year ago, were instantaneous successes. The new models will be even greater successes.

We have always had the quality. Now we have a complete range of models. With 1, 2, 3½ and 5 ton models we have a suitable capacity for every reasonable business requirement.

The entire Kelly line is designed as a harmonious whole. It is the result of eight years of uninterrupted observation of the evolution of the successful commercial car.

May we send you catalog and full specifications of new models?

The Kelly-Springfield Motor Truck Co.

1000 Burt Street Springfield, Ohio



## M A Y O R A D I A T O R S



EVENTS have proven that more courage and ability are required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY
New Haven, Connecticut

## FISK

## **PURE PARA TUBES**

Fisk tubes are well known in the trade as the tubes that cannot be excelled. They truly reflect the manufacturing policy of The Fisk Rubber Company to build only the best.

**F**ISK Pure Para Tubes give perfect satisfaction. They have cut in half the tube expense of many a car owner. They are made of Pure Para Rubber with just enough sulphur to vulcanize. They will not leak. They do not deteriorate when not in use and are unaffected by climatic changes.



THE prompt result from consumers throughout the country in response to our recent national advertising demonstrates the car owners' interest in a tube of exceptional quality. Now is the time for dealers to profit by the widespread tube advertising we are doing.

### Dealers Attention!

The present year promises to be the greatest in the history of The Fisk Rubber Company. Do you, as a Dealer, want to share in this prosperity? If so, write Dept. 23 for Dealers Proposition.

### THE FISK RUBBER COMPANY

Factory and Home Office

Chicopee Falls, Mass.

Distributors-THE FISK RUBBER COMPANY OF N. Y.

## We want to share with you the confidence we have

AJAX

TIRES

Guaranteed

(in writing)

**5,000 Miles** 

WE know that Ajax tires are best for car owners to use, andt herefore best for dealers to sell. Ajax tires beget confidence and confidence is "the state of feeling of trust in, or reliance

upon another; assurance of, or belief in a person or thing."

Ajax tires are fashioned of Para rubber, skillfully compounded and are built upon a web structure of long staple Sea Island fabric. But the thing that makes for

the higher built-in quality of Ajax tires is our own steadfast determination to make them the best tires in the world.

A fixed number of Ajax tires are made each and every dayno more and no less. routine has continued uninterrupted 24 hours a day (Sundays excepted) since February 1911,

without curtailment. It is this even, well-ordered regularity of production, combined with finest materials, which realizes the high quality of Ajax tires. With important additions to our

factories, and with continuous factory operation, 24 hours daily, the de-mand for Ajax tires has always exceeded the supply. This is perhaps the boldest word to be said of Aiax

tire worth. Ajax tires are

guaranteed in writing for 5,000 miles, and have been so guaranteed for nine years. This is 1,500 more miles or 43% more tire service than the implied life, 3,500 miles, of other standard makes.

Decide now on Ajax tires for 1914. Get the extra service. Write for new Ajax booklets.

"While others are claiming Quality we are guaranteeing it?

## AJAX-GRIEB RUBBER COMPANY

1796 Broadway, New York

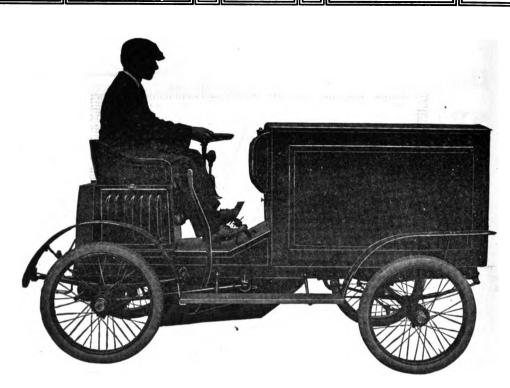


If you are interested in automobiles, you should read this book on one of the vital features of your car—the bearings. There is another book on Bearing Service—a postal will bring both books to you.

"Hyatt Quiet Bearings"



HYATT ROLLER BEARING CO.



## \$365.00—THE MOTOKART—\$365.00

PRODUCTION GOVERNS COST and upon organization we adopted a fixed policy of at all times regulating our list PRICE by actual shop cost. The popularity of the MOTOKART, the volume of orders already booked have rendered possible a cost which enables us to announce a new list figure—\$365.00. A PSYCHOLOGICAL FIGURE, MR. DEALER. A selling talk, A DOLLAR A DAY FOR A YEAR.

Don't forget that

THE MOTOKART IS NOT A CYCLECAR, it is not a miniature pleasure car converted to commercial usage, it is the only car of its type embodying a four-cycle water-cooled engine built exclusively for commercial purposes. A chassis ideal for pleasure usage can never successfully be made the basis for a delivery car, the difference in requirements is too radical. We know nothing about pleasure cyclecars, but have devoted ourselves exclusively to the purpose of producing the best possible parcel delivery car at a universally acceptable price.

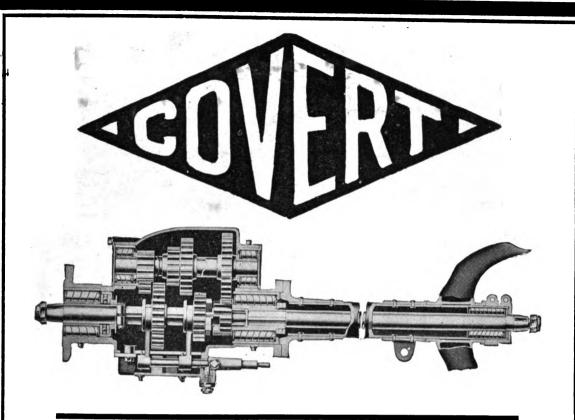
The MOTOKART'S field of usefulness is unlimited. Live dealers can demonstrate that it will increase the yearly profits of any storekeeper or merchant who has moderate size and weight merchandise to deliver. Agency applications for unoccupied territory are solicited from men who recognize the coming possibilities of the parcelcar wagon.

## TARRYTOWN MOTOR CAR CO., Inc.

Factory: Tarrytown, N. Y.

General Offices: 1790 Broadway, New York City

Address all correspondence New York Office



■ Specialization reaches its highest development in the production of the Covert Transmission. The present day buyer of a motor vehicle looks for and appreciates the use of parts of known reputation and quality. The recognized standing of the Covert Transmission adds to the reputation and sales value of any car on which it is used.

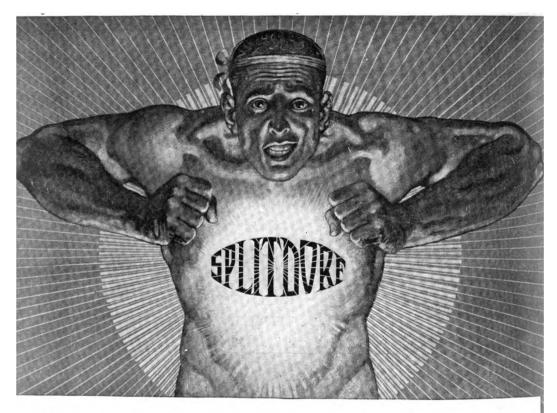
Manufacturers who realize this fact and there is a great number of them—add to the reliability and service value of their cars, at the same time cutting down production expense, by adopting the Covert Transmission.

■ The leading manufacturers of Axles and Jackshafts have standardized their product to take the various Covert Models.

### COVERT MOTOR VEHICLE CO.

Factory, Lockport, N. Y. Saies Office, Detroit, Mich.

## TRANSMISSIONS



## For Low-Powered High-Speed Engines

there is nothing on the market so effective as the new water-proof, high-tension SPLITDORF "E U 4" MAGNETO. In design and construction it is destined to fill a long felt want in the motoring world as low-powered, highspeed machines can now be equipped with a powerful instrument to give their ignition systems the "kick" they have so sadly needed.

Waterproof and dustproof, the "E U 4" SPLITDORF magneto is made throughout on a principle of strict utility combined with natty appearance and reserve power sufficient for a 30 horsepower motor at high speed.

It is a simple instrument, simple in wiring and easily installed to produce the



hottest of hot, fat sparks and guaranteed to give the small, high-speed engines a flexible ignition system and a world of reliable "pick-up" power never before attained.

Full information upon request

### SPLITDORF ELECTRICAL CO.

ATLANTA, 10-12 E. Harris St.
BOSTON, 180-182 Massachusetts Ave.
CHICAGO, 64-72 E. 14th St.
DETROIT, 972 Ward Ave.
KANSAS CITY, 1823 Grand Ave.
LOS ANGELES, 12-26 S. Olive St.
Factory: NEWARK, NEW JERSEY

NEWARK, 290 Halsey St.
NEW YORK, 18-20 West 63rd St.
PHILADELPHIA, 210-12 N. 13th St.
SAN FRANCISCO, 1028 Geary St.
SEATTLE, 1628 Broadway
LONDON BUENOS AIRES

American made for American trade

## **NEW DEPARTURE**

Guaranteed

## BALL BEARINGS

To facilitate supplying demand for garages, dealers and owners, for New Departure ball bearings, the following distribution agencies are announced, where stock of these bearings is carried.

Ahlberg Bearing Co93 Massachusetts Ave., Boston, Mass.
Pruyn & Bilodeau
Ahlberg Bearing Co
Jos. C. Gorey & Co352 W. 50th St., New York City
The Gwilliam CoBroadway and 58th St., New York City
Pruyn & Bilodeau 1876 Broadway, Cor. W. 62nd St., New York City
Albany Hdwe. & Iron Co
Syracuse Rubber Co
Iroquois Rubber Co279-283 Washington St., Buffalo, N. Y.
Rochester Rubber Co
The Gwilliam Co
Bumiller-Remelin Co
Cray Bros
Wasses Willia Co. T. St., Cleveland, Onto
Hearsey-Willis Co
Machinists Supply CoPittsburgh, Pa.
Ahlberg Bearing Co
Chicago Pulley & Shafting Co32-36 S. Clinton St., Chicago, Ill.
Herring Motor Supply Co912-14 Locust St., Des Moines, Iowa

Faeth Iron Co
Ballou & Wright

### The New Departure Mfg. Co., Bristol, Conn.

Western Branch, 1016-17 Ford Bldg., Detroit

## "Gives Standard Carburetion

QIX years on the European market—and two years on the American market-without a change. WHY?

To have a record like this and show a constant growth in sales a carburetor must embody some vitally important principle that uniformly makes good.

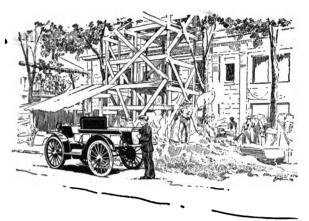
Car manufacturers and dealers are invited to familiarize themselves with the reasons why.

Write and we will tell you

### **TENTH** CARBURETOR CO., Detroit, Mich.

Mercedes Repair Company, 159-161 East 54th Street, New York Motor Parts Co., No. 185 Columbus Avenue, Boston, Mass. Motor Parts Co., No. 818 North Broad Street, Philadelphia, Pa. AGENTS: Fawkes Auto Company, Minneapolis, Minn. René J. Marx Company, No. 1062 Geary Avenue, San Francisco





### Sell the Most Successful Truck

PLAIN unadorned facts as to design, construction, service, and records, are responsible for the popularity that has made the International Motor Truck the most used truck in the world. The

### International Motor Truck

has a rated capacity of one-half ton. It is unequalled for quick delivering and light hauling. That is why it has an almost endless field of possible buyers—that is why it is being successfully used in over 100 lines of business.

Average business men in small towns and large, and farmers, save and make money with the International Motor Truck. Read our catalogues and learn the reasons for this. Study points like the following: the various styles of body—solid rubber no-blowout tires—ample road clearance—simple engine—ease of operation, etc.

Let us show you how to increase the motor truck business of your community. This is a money making opportunity. Why not write us today?

### International Harvester Company of America

155 Harvester Building

Chicago USA

## Lewkowicz Convertible Body

Two bodies in one---a touring car when you want it and a closed car when you need it.

The change is made in less than one minute's time, without using ANY TOOLS, SCREWS, BOLTS or PINS.

So mechanically perfect that ladies can make the change.

Adaptable to any car from a Ford to a Pierce-Arrow.

**Private owners** write today for full particulars to get our convertible body on your own car.

Automobile agents and dealers write today for territorial rights. MANUFACTURERS write today for licenses.

The Holbrook Company, of New York, the well-known body builders, have been licensed by us to manufacture our Lewkowicz convertible body for high grade cars for Greater New York.

## Convertible Automobile Body Corporation

OFFICE AND FACTORY: 1885 Park Ave., Cor. 128th St., New York City.

Telephone, Harlem 4390



The man of discerning judgment demands that his clothes, his shirts, his shoes-even his cigarettes-be made by hand. Is there any wonder that he also demands hand-made tires and tubes instead of those turned out by the thousands in bulk? Kelly-Springfield Tires and Tubes alone meet the requirement.

### Kelly-Springfield Tire Company

Corner Broadway and 57th Street, N. Y.

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detroit, Cincinnati, San Francisco, Los Angeles, Cleveland, Baltimore, Seattle, Atlanta, Akron, O.

The Hearn Tire & Rubber Co., Columbus, O.

Boss Rubber Co., Denver, Colo. Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La. Central Rubber & Supply Co., Indianapolis, Ind.

The Olmsted Company, Inc., Syracuse, N. Y. Bering Tire & Rubber Co., Houston, Texas. Todd Rubber Co., New Haven, Conn.

Atkinson Tire & Supply Co., Jacksonville, Fla.

C. D. Franke & Co., Charleston, S. C.

K. & S. Auto Tire Company, Limited, Toronto, Can. Barnard & Michael, Buffalo,

### A CAR IS ONLY AS SAFE AS ITS BRAKE LINING

No matter how costly or well constructed, a car will be hopelessly wrecked and the occupants perhaps seriously injured or killed if the brake lining fails at a critical time. Accidents reported daily in the newspapers prove this a fact.



## M BURN Brake Lining

never fails. It locks wheels almost instantly, or gradually, as required. It never burns, chars, slips, ravels or rots out. It wears down slowly, outlasting twelve ordinary linings. It is made of pure asbestos interwoven with strong brass wires, producing maximum braking efficiency with minimum wear and expense. Name on every piece—look for it. Sold by most dealers.

Write for Sample and Booklet and Special Dealers' Proposition

### H. W. JOHNS-MANVILLE CO.

Albany Baltimore Ruffalo

Cincinnati Kansas City Cleveland Los Angeles Dallas Louisville Detroit Milwaukee Indianapolis Minneapolis Kansas City

New York
New Orleans
Omaha
Philadelphia
Pittsburgh

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Seattle
St. Louis
Syracuse

San Francisco

## 75% of all tire trouble is due to under inflation

HERE is no method yet discovered of ascertaining the pressure in the inside of a tire, except by the use of a pressure gauge. A casing containing 40 pounds of air looks and feels exactly like a casing containing 80 pounds. If your tires require 80 pounds and you only give them 40, they're on the quick road to the scrap-heap.

TIRE A

## **SCHRADER**

Universal Tire Pressure Gauge

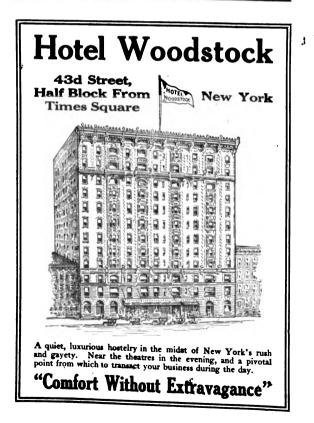
and Save Your Tires

**Price, \$1.00** 

A. SCHRADER'S SON, Inc.

782-791 Atlantic Ave., Brooklyn, N. Y.







Сору contributed by Russel M. Seeds, Seeds Advertising Agency. Indianapolis

### The Lincoln Highway does not pass through my town

Say, Mr. Hubbard:

W HY should I worry about the Lincoln Highway? I'd have to drive about 300 miles to get to it and such a thing as devoting the time and money for a long tour is beyond me.

### A Question:

WHY should I contribute my mite to this great Ten Million
Dollar enterprise? I am not a sport. By plugging hard I
am able to keep out of debt and buy a new tire occasionally.

#### My Answer:

HAVE been dreaming of the time when all our roads will be good so I can drive 20 miles into the country without accumulating a bunch of expense for repairs. I know that when the Lincoln Highway is put through it will not be five years before every road of consequence in this broad land is a good road. I will be personally benefited just as if it passed my door.

I sent in Five. Did YOU?

Mail a check today to

The Lincoln Highway Association Detroit, Michigan



Of the 75 makes of cars exhibited at the New York Show, Bosch Ignition was used by 175% more manufacturers than was the next nearest make of ignition system.

CARS -	•	75	The judgment
Bosch		- 33	of experts is worth con-
Next -	_	- only 12	sideration by
Next -	_	- only 8	those who
Next -	-	- only 8	have neither
Next -	-	- only 8	the time nor
Next -	-	- only 5	facility for in-
Etc. Etc	<b>.</b>	•	vestigation.

Be Satisfied

Specify Bosch

dence Solicited

### **BOSCH MAGNETO COMPANY**

224 West 46th Street

New York



EMPIRE " The Little Aristocrat" Completely Equipped

New Series Model 31, 110 Inch Wheel Base

A larger, more beautiful car, with every luxury and equipment. Increased production brings the price down to \$900.

Advance catalogue with complete details is ready

Get a copy of the Illustrated story of the Transcontinental Empire. Forty pictures

EMPIRE AUTOMOBILE COMPANY, Indianapolis, U.S.A.

HE circulation of the Motor World is a guaranteed one, sworn to by an affidavit, which will be sent in detail to any one upon request







All prices F. O. B. Detroit HUPP MOTOR CAR COMPANY

1254 Milwaukee Avenue

Detroit, Mich.



### NORDYKE & MARMON CO. INDIANAPOLIS (ESTABLISHED 1851) INDIANA



## Stewart Speedometer

Approximately 450,000 cars will be built during 1913 and 400,000 of these will be equipped with a magnetic type speedometer-like the Stewart.

THE STEWART SPEEDOMETER FACTORY 1949 Diversey Boulevard

Chicago, U.S.A.

Service stations in every important city in the world

Send Us Your Inquiries When in the Market for

## SHEET METAL STAMPINGS

Estimates Cheerfully Furnished

COMPANY THE BOSSERT Utica, N. Y.

Manufactured since 1901 for high grade

#### and TRUCKS AUTOMOBILES

3¼ x 5¼ four and six cylinder, 4½ x 5½ four and six cylinder Standard or Unit, and 4 x 4, 4½ x 5 and 4½ x 5 Standard Types. All L Head 4 Cycle.

Manufacturers are invited investigate our service and or facilities. Literature a request.

The Rutenber Motor Co. MARION, INDIANA





## Triplex Engine Starter For Ford Cars

Mechanical, durable, simple and efficient. 100 per cent. uninterrupted service from the time it is attached.

Write for particulars regarding dealer arrangements.

UNIVERSAL MANUFACTURING CO. PACINE, WIS.



ELECTRIC ENGINE STARTERS Electric Lightian Emissions for Mater Cars ELECTRIC ENGINE STARTERS,

**APELCO** Storage Batte

APFI CO **None Lighting Plants** 

Apelco Headlights pierce fog and dust as well as darkness

#### THE APPLE ELECTRIC COMPANY

America's Leading Manufacturer of Electrical Equipment for Motor Cars and Motor Boats

64 Canal Street

Dayton, Ohle

# American Axles

Found Only on High Grade Cars

THE AMERICAN BALL-BEARING CO. Cleveland, Ohio







**Perfect Carbon** Remover \$10

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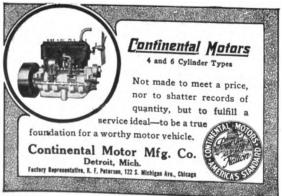
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This name on Automobile Tires and Rubber Accessories signifies inherent qualities of material and workmanship that insure the maximum of service at the minimum of expense.

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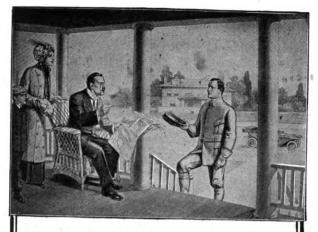
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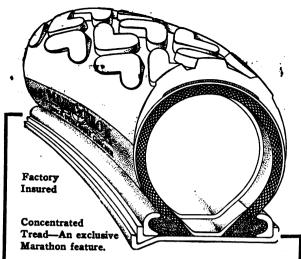
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In tire building, speed means QUANTITY—not quality—not safety. Speeding is not permitted in the Marathon factory. We strive for utmost quality, and we build EVERY Marathon Tire very slowly, very carefully, using genuine first quality materials. Thus, Marathon is the safe tire.

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This tire is made to meet the hardest service. There's nothing cheap about it.
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costs us more—cuts our profit—but it's a great economy to Marathon users.

Year:

Year:

The sharp, heavy
angle tread is safe
to use all the year
—winter, summer,
spring,
fall. The fine, tough
rubber gives great endurance.
The angles last.

Safe on The Marathon angle tread is safe on all roads—alipmud, snow and sand. The angles can't give.

Safe in We give a rigid 4,000 mile guarantee with mile guarantee with every Marathon. Yet gives more than 4,000 miles on the average — and the thick, plain tread below remains to double it.

Marathon is "The Safe Tire" for both Dealer and Motorist.
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In April, 1913, a new high record for one month's shipments of Packard motor carriages.

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New York, February 5, 1914

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"Put More Bodies Through" is the constant urge of automobile factory managers today.

To make this possible we have originated an Auto Body Varnish with unique flowing properties. It flows out so freely that even when applied by a novice it takes care of itself, needing no brushing out. It produces a full brilliant finish without sags, runs or silking.

Diamond B Auto Body Finishing, as we call this varnish, is high grade

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It is sufficiently elastic to withstand any contraction and expansion of metal bodies caused by extremes in temperature or weather conditions, without checking or losing its brilliancy.

The use of Diamond B produces that deep, smooth lustre that appeals to discriminating buyers.

Complete details for the asking.

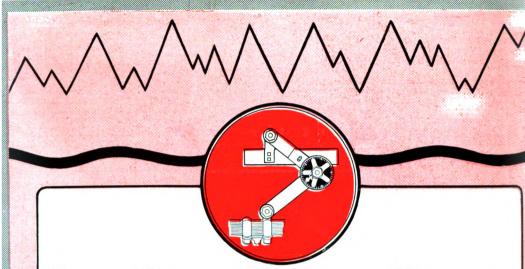
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Truffault-Hartford

SHOCK ABSORB

"The Pioneer and the Best

AR buyers have learned that in the efficiency of the Truffault - Hartford Shock Absorber there is more than the assurance of comfort.

The veriest novice now knows that the minimiz-

ing of jolt, jar and vibration saves his tires. saves his engine. saves his axles.

in fact, contributes to the working efficiency and wearing quality of every part of his car.

Truffault-Hartfords are real shock absorbers. Their control over jolt, jar and vibration amounts to practically a complete elimination of these destructive factors.

Truffault-Hartfords are STAND-ARD. On twenty-five of the best known American cars they are regular equipment, many of these

> cars having been fitted with them for more than five consecutive sea-Truffaultsons. Hartfords are

first in the minds of all motorists as a synonym for the easy riding that spells comfort and economy. They are a vital, indispensable factor to easy car sales. Four Models, \$16, \$35, \$50 and \$60 per set of four. Write for Catalog.

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CFT-GR.

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DETROTT. MICH. U.S.A.
October Seventeenth,
1 9 1 3.

191:

Mr. T. J. Daley, Sec'y, Standard Woven Fabric Co., Framingham, Mass.

Dear Sir:-

On account of the satisfactory results obtained from tests of the Multi-bestos Brake Band Lining we have signed, and are enclosing herewith, our contract for 150,000 ft. which is our approximate requirements for one year.

Respectfully

Packapid Mator Car Company,

Purchasing Manager.

The Chart shows the results of a series of tests conducted for us at the Worcester Polytechnic Institute to determine the relative superiority of Multibestos over five other leading brake linings.

Just exactly how much superior Multibestos is in various braking qualifications is shown by the chart.

The figures from 0 to 36 represent units of pressure on the brake pedal. Figures from 0 to 100 represent the braking effect on the car wheel.

So, taking 16 units pressure, Multibestos shows a braking effect of 57; the other lin-

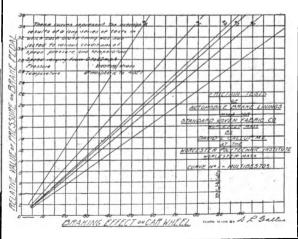
Ings from 48 on down to 26 or from 85% down to 45% of the efficiency of Multibestos.

Insure the safety of the cars you sell by seeing that they are Multibestos equipped.



## The Standard Woven Fabric Co.

New York, 276 Canal St. C. D. Schmidt. Boston. Mass., 903 Boylston St. Philadelphia, Pa., 1427 Vine St. Chicago, Ill., 1430 Michigan Blvd., F. E. Sparks. San Francisco, Cal., Cor. First and Howard Sts., Fred Ward & Son, Inc.



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## Some Plain Truths About Tires

THE Firestone Economy of Most Miles per Dollar is a direct result of the Firestone method of building—from design to final test.

The Firestone design prevents all abnormal strain—the quality and quantity of Firestone rubber will stand furious heat and terrific wear.

The wrapped tread construction, the two-cure process, the open steam vulcanizing—are all principles vital to Firestone supremacy—Firestone economy.

Economy of upkeep follows naturally the <u>resilience</u> of the Firestone rubber which, by absorbing little shocks and vibration, means long life to the car.

An inspection of the cross-sections of a Firestone Tire shows that greater tread-toughness and greater tread-thickness are more than Firestone claims—they are fundamental Firestone facts—the vital reasons back of Firestone Service—Most Miles per Dollar.

The Firestone Tire and Rubber Co., Akron, Ohio—All Large Cities "America's Largest Exclusive Tire and Rim Makers"

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# SHARRER ONE HAND TOP

#### Was the Big Feature at Both National Shows

Before the shows it was generally conceded by leading engineers and top builders that the SHARRER TOP was the best of its class.

Since the shows many prominent manufacturers with large outputs have confirmed this judgment by changing their top equipments to SHARRER ONE HAND TOPS and are making preparations to use the SHARRER exclusively.

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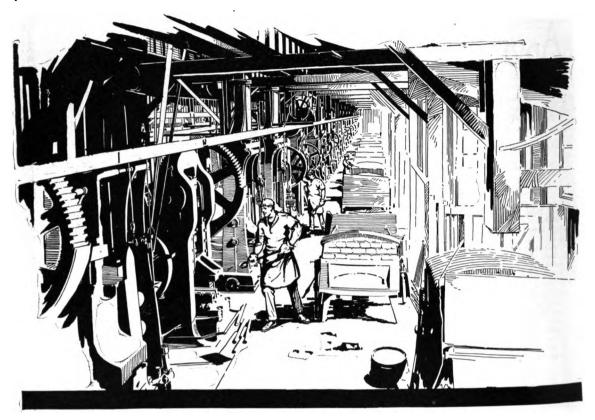
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## The Largest Drop Forge Plant In The Business

ALKING of economizers-take our drop forge plant,

which, while it is the largest in the business, is only one small part of our equipment.

Here we operate 40 large steam hammers with a combined striking power of 6,880,000 pounds or 3,440 tons.

Also there are over a dozen monster presses and ten

Ajax forging machines.

Take one example of the economy such equipment

Electric head, side, tail and dash lights Storage battery

Overland hammers have an attachment whereby the

spring-seat of a front axle is so perfectly formed (by the hammer blow) that it needs no additional machining.

This operation takes but 30 seconds.

In smaller plants the same work by slow, small factory methods takes from 30 to 40 minutes.

And this is but one of the hundreds of different economies effected by our huge drop forge equipment.

Now do you see why the Overland costs you 30% less than any other similar car made?

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## The Willys-Overland Company, Toledo, Ohio

SPECIFICATIONS: 35 Horsepower Motor 114-inch wheelbase 33x4 Q. D. tires

Clear-vision rain-vision wind shield Electric horn

Manufacturers of the tamous Overland Delivery Wagons, Garford and Willys-Utility Trucks. Full information on request.

# MOTORWORLD

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No. 7

### JENCICK'S HYBRID MOTOR BUSINESS COMES TO GRIEF

Adding Automobile Motors to Marine Type Fails to Avert Second
Bankruptcy — Sheriff Stops
Removal of Machinery.

Planting one foot on land and the other in the water did not serve the Jencick Motor Corporation, of Port Chester, N. Y., to better advantage than when it had both feet in the water, so to speak.

Operating as the Jencick Motor Mfg. Co., and devoting itself wholly to the production of marine engines, it sank in deep financial water in May, 1911. When the wreck was rescued from the bankruptcy court, it was succeeded by the Jencick Motor Corporation, which undertook the manufacture of automobile engines in addition to those of the marine type, but the corporation fared no better than its predecessor and, therefore, filed a petition in bankruptcy on Saturday last, which was followed by an application on the part of the American Manganese Bronze Co., of New York, for the appointment of a receiver, which latter petition the court granted, Frederick W. Stelle being named as temporary receiver

The company's liabilities amount to \$22,802 and its assets to \$15,607. Its failure was preceded by an effort to remove at least some of the machinery and tools from the factory, which effort, however, was prevented by the appearance of a sheriff and a lawyer representing a creditor who had secured judgment. At that time, Stephen Jencick, president of the company, admitted that the stuff, which already was loaded on a frieght car, was to be shipped to the Nott Fire Engine Co., of Minneapolis, with which Jencick himself expected to become identified. Needless to say, the sheriff stopped the shipment. In the

petition pending before the court, it is stated that an offer has been made for this machinery, and the value of it is being affected by the railroad demurrage charges which are piling up while the freight cars are being held.

The Jencick assets consist of stock, \$1,000; machinery and fixtures, \$4,700; accounts, \$2,867; patterns, \$25; photos, \$15, and real estate, \$7,000, mortgaged for \$5,000. The liabilities are made up of a long list of comparatively small creditors, of whom the American Manganese Bronze Co., whose claim is \$1,303, is one of the largest.

#### Adamson Vulcanizer Again Sustained.

In the United States District Court for the Eastern District of Missouri last week, the Adamson vulcanizer patent, No. 1.057.911, was again held to be valid. The decision was rendered in the suit brought by the Adamson Mfg. Co., of East Palestine, O., against the Gilliland Auto Supply Co., of St. Louis, against whom a permanent injunction was granted.

The patent in question covers "vulcanizers constructed to retain a combustible fluid which is heated simultaneously with the vulcanizer by the combustion of the fluid, thereby automatically controlling the temperature."

#### Licenses for Three More Spark Plugs.

Three more licenses under the Canfield spark plug patent have been granted by A. R. Mosler & Co., the owner thereof. Those to whom they were issued are the Randall-Faichney Co., Boston, Mass.; Hampshire Mfg. Co., Hatfield, Mass., and McCormick Mfg. Co., Dayton, O.

#### Premier Denies Change of Management.

Printed reports that a new general manager had taken charge of its affairs are emphatically denied by the Premier Motor Mfg. Co., of Indianapolis. It asserts that "neither the management nor the control has changed and that no change is contemplated."

### FORD DROPS MEANING HINT TO SOME OF HIS CRITICS

Charged with Close Buying, Advises
Sellers to Copy His Methods
and Cut Costs—Says He
May Show Them How.

Of the volcanic eruption of mingled commendation and criticism that followed the Ford Motor Coo's announcement of the distribution of \$10,000,000 in profits, through the establishment of a \$5-a-day minimum wage and an eighthour day, one criticism which, if it did not appear in print was many times put into spoken words, taking about this form:

"If instead of paying \$10,000,000 in profits to his own employes, Ford paid better prices for the goods he purchases he would permit more good to be done in more places."

In other words, and as is fairly well known, Ford, like nearly all others who place enormous orders for parts and material, is a close purchaser. Because of the volume, the amount of his orders runs into large sums, and because he is such a safe risk his business is doubly desirable and, therefore, is much sought. Despite the fact, the criticism referred to has been leveled at him even by some of those whose wares the Ford company purchases.

It develops, however, that even that particular phase of the situation has not escaped the attention of those responsible for the Ford world-startling, profitsharing plan, and the trend which the Ford thoughts are taking will undoubtedly prove almost as startling and afford food for serious reflection in many directions. For it is the Ford belief, as recorded by an Iron Age man who spent two days with the Ford principals, that "the same methods which enabled the Ford company to earn the profits it has earned can be applied by

those who furnish it material in corresponding quantity."

Possessed of this belief, the company proposes to "lend its influence and assistance toward the installation of similar methods in the plants of those manufacturers from whom it buys, so that the prices at which it buys will not work a hardship upon those employes any more than the sale of the Ford motor car at a price exceptionally low affects the wages of Ford employes. Where it is impossible to bring about these improvements in the methods of manufacturing purchased materials, the Ford Motor Co. proposes to extend its own operations to cover the manufacture of those materials and thus make available to the additional employes engaged its profit sharing distribution."

#### Suit Against General Motors Fizzles.

What becomes of many of the "million dollar lawsuits" that are filed without hesitation whenever two men fall out is well illustrated in the case of Harry L. Horton vs. General Motors Co., which was dismissed this week in the Supreme Court for New York county because Horton failed to prosecute. After the action demanding \$150,500 was filed, about two years ago, little more action was taken.

Horton was the assignee of one Neil MacDonald; MacDonald claimed that between January 1 and December 1, 1910, he found a customer for \$5,000,000 General Motors 6 per cent. gold debentures, but that because of the acts of the General Motors he lost the prospective customer. The \$150,000 represented the commissions he claimed he would have earned and the \$500 was for expenses.

W. C. Durant, in answering the complaint, said that the charge wasn't valid, and that, anyway, Horton should have sued the General Motors Securities Co. and not the General Motors Co. The sum and company involved were large, but like many others of its kind it fizzled.

#### Denmead Acquires Interest in V-Ray.

Having acquired a one-third interest in the V-Ray Co., of Marshalltown, Ia., maker of V-Ray plugs, Dwight W. Denmead was elected secretary and treasurer at the annual meeting of the company last week. B. W. Sinclair, who previously filled those offices, was made vice-president, the presidency remaining with V. N. Hansen. Messrs. Hansen and Denmead are located at the factory in Marshalltown, while Sinclair is in charge of the V-Ray Pacific Coast branch in San Diego, Cal.

## RUDGE-WHITWORTH GIVES APPROVAL TO HOUK WHEEL

Cablegram Reporting Fact Also Repudiates Rudge's Connection
With Litigation Involving
Houk's License.

According to cable advices from England, the Houk detachable wire wheel has been accepted as a wire wheel suitable of being manufactured under the patents held by the Rudge-Whitworth company, which acceptance was one of the routines of the Houk license. The Houk wheel is the product of the Houk Mfg. Co. of Buffalo, which bought out the old McCue company and control of which is held by George W. Houk.

Houk first began wire wheel manufacture in this country at the plant of the Standard Roller Bearing Co. in Philadelphia, with which company he has been producing Rudge-Whitworth detachable wire wheels along identical lines followed by the parent company in England.

To provide for a less expensive manufacturing product and one that could be made in greater quantities, Houk acquired control of the Buffalo plant wherein he has since been making the Houk wheel under the Rudge-Whitworth patents.

Shortly after the Standard Roller Bearing Co. went into the hands of a receiver they started suit against Mr. Houk and his Buffalo company, claiming that he had no right to manufacture the Houk wheel. The story of the filing of this suit was told in the January 8th issue of Motor World, and through misinterpretation by some readers of the wording of the story the impression, according to Houk, was created that he had not been regularly licensed to operate under the Rudge-Whitworth patents in this country, when, as a matter of fact, his license bears date October 5, 1912; if further confirmation of his rights were necessary, it is contained in the acceptance of the Houk wheel by the Rudge-Whitworth company as a suitable and acceptable product to be sold as well as manufactured under their patent rights.

It is also learned that, contrary to the impression created by the filing of the Standard Roller Bearing suit, the Rudge-Whitworth company of England is not a party to the suit filed by the Standard Roller Bearing Co. and that, instead of seeking to interfere with the manufacture of wire wheels, is lending its assistance to their production.

Houk left England on the Lusitania this week with all of these matters satisfactorily arranged so that there can be no delay whatsoever in his extensive manufacturing and selling of the Houk wheel. That Rudge-Whitworth detachable wheels will continue to be manufactured in this country is also assured, but by whom will not be decided definitely for a few days.

#### Utah's Automobile Factory in Prospect.

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They expect to build both cars and trucks in Utah, too, the Wasatch Motor Mfg. Co. having been organized in Salt Lake City for the purpose. It is capitalized at \$100,000 and expects to build a four-acre plant on a ten-acre site which, it is stated, has been purchased on State street between 15th and 16th streets, south. During the first year, trucks only will be produced and it is naively remarked that the company "will operate on the Ford plan."

The officers of the company are A. E. Young, broker and real estate man, president; John A. Maxfield, mining operator, vice-president; C. M. Fallas, vice-president; J. B. Hamby, secretary; R. E. Montrose, of R. E. Montrose & Co. brokers, treasurer. George T. Smith, formerly in charge of the motor truck mail delivery of New York City and later with the Ewing American Motor Car Co. of Findlay, O., is the chief engineer and superintendent.

Two St. Louis Supply Houses Merged.

The Phoenix Auto Supply Co., of St. Louis, which was one of the first houses of the sort in the West, has absorbed the Continental Equipment Co., in that city, and, in addition to its own establishment at 3972 Olive street, will continue the two Continental stores at 3124 Locust street and 5887 Delmar boulevard. John F. Shuford, the Continental manager, has become general manager of the enlarged Phoenix company, of which O. L. Garrison is president, Clifford R. Garrison, vice-president, and R. A. Baxter, secretary-treasurer.

Willys to Seek Rest in California.

John N. Willys, president of the Willys-Overland Co. and the other properties bearing his name, is booked to depart to California on Tuesday next. 10th inst. He is purely on recreation bent.

Morgan & Wright Double Capitalization
Following the example of the other
United States Tire units. Morgan &
Wright, of Detroit, have doubled their
capital stock. It now is \$5,000,000.

# COMMITTEE CONTROL FOR SPARK PLUG ASSOCIATION

Guidance of Newly Organized Body Vested in Group of Men-No President Provided - Porcelain Makers Eligible.

Aside from a secretary and treasurer, the Association of Spark Plug Manufacturers, which is composed mostly of licensees under A. R. Mosler's Canfield spark plug patent, No. 612,701, has no officers; the fine reasoning which lies back of the headless organization is not made plain by the constitution and bylaws or by the members, but is said to be due to legal advice as to present day business conditions.

As was announced in Motor World, the association, which had its real beginning at the New York automobile show, was completed in Chicago when the automobile show was held last week in that city. The secretary is J. W. Fisher, of the Silvex Co., maker of Bethlehem plugs, and the treasurer is A. R. Mosler. Aside from these the affairs of the body are governed by an executive committee, which committee choses its chairman each time it meets. The committee members are: D. B. Mills, Rajah Auto Supply Co.; Albert Champion, Champion Ignition Co.; R. A. Strohnneian, Champion Spark Plug Co.; E. M. Benford, Benford Mfg. Co., and Emil Grossman, of the Emil Grossman Mfg.

The constitution and bylaws drawn up by William A. Redding, Mosler's attorney, were adopted without change. They provide that any plug or plug parts maker may be a member, that dues shall be \$25 a year, that government shall be by executive committee, and that the annual meeting shall be held in New York in January.

Of the parts makers, the Empire China Works, of Brooklyn, a maker of porcelains, has been admitted, and the Imperial Porcelain Works and the Star Porcelain Works, both of Trenton, N. J., have made application.

#### Weed Finds Another Grip Maker to Sue.

The Walker tire chain grip, which is about the only one left standing before the Weed Chain Tire Grip Co.'s patent suits, is the alleged infringing device in a suit instituted this week by the Weed company in the United States District Court for the Southern District of New York. The action is directed at the Walker Tire Chain Co. and Richard F.

Ely, trading as the Donnelly Motor Equipment Co., of New York City, and charges infringement of the Parsons patent, No. 723,299.

The matter was taken into the courts late last week, being directed at the "Walker Tire Chain Co., Walter F. Donnelly and Fordyce B. Caswell, trading as the Donnelly Motor Equipment Co.," but this action was discontinued and the later one filed when it was learned that a change had been effected in the personnel of the Donnelly company. The Walker grip was exhibited at the New York automobile show.

#### Goodrich 1913 Profits \$2,600,000.

According to a preliminary report of the B. F. Goodrich Co., of Akron, O., made up after the books were closed but presented in advance of the full annual statement, its profits for the year 1913 were approximately \$2,600,000. This amount was reached after making proper allowances for maintenance, depreciation and other things. Added to the surplus carried over, the Goodrich undivided profits will be about \$700,000 after paying the full year's dividend on the preferred and one per cent. on the common.

The quick assets of the company on December 31st last were, in round figures, \$20,000,000, and its current liabilities \$4,000,000. The preliminary report states that the company has no bonded debt and no need for the new financing, and adds that "adverse operating conditions encountered during the year, resulting in decreased income, will be dealt with in the annual report. Taking these into consideration, the directors feel well satisfied with the result of the year."

#### Buick Flirting with California Town.

D. D. Buick, who is sometimes credited with being the founder of the Buick Motor Co., of Flint, Mich., is reported to be negotiating with the board of trade of Monrovia, Cal., with a view of establishing an automobile factory in that little town. Buick's plans, apparently, are not on a modest scale, as it is stated that he proposes to form a corporation capitalized at \$1,000,000.

#### May Make Wire Wheels in McKeesport.

For the purpose of manufacturing the wire wheel invented by George Baehr, the United States Wire Wheel Co. has been organized in McKeesport, Pa., with Baehr as president. J. R. Worley, of McKeesport, is the only other man identified with the project whose name has been made public.

# ADOPT TENTATIVE PLAN FOR SECOND S. A. E. "INVASION"

Forty-Day Trip Including Paris and London Shows to Start About Oct. 10th—Germany and Switzerland Included.

Plans for the second trip of the Society of Automobile Engineers across the Atlantic already are well in hand and have progressed to the point where a tentative schedule and itinerary have been laid down.

It is planned to "take in" both the British and the French automobile shows and for this reason the sailing date from New York has been set for about October 10th, though this may be changed to conform to the opening date of the Paris show, which has not yet been set; the Olympia exposition opens November 6th and closes November 14th. At any rate, the expedition will proceeded direct to Paris, where a fourday stop is scheduled. During this stay the Panhard, Renault, De Dion-Bouton. Clement, Peugeot, Delaunay-Belleville and Lemoine plants in all probability will be inspected.

From Paris, the route leads to Turin and Milan in Italy, where three days will be spent visiting, among others, the Fiat, Isotta-Fraschini, Itala, Zust and Bianchi factories. Thence, the expedition will proceed to Lucerne, Switzerland, where about 36 hours will be allowed for sightseeing before the journev to Schaffhausen at the Falls of the Rhine, is commenced, where the extensive electric steel plants will be inspected. Further along, a two-day stop is scheduled in Stuttgart, Germany, where time will be taken to go over the Mercedes-Daimler plant and the Bosch and Eisemann magneto plants. From Stuttgart, the trail leads by steamer down the picturesque Rhine to Cologne and thence by rail to Essen to visit the Krupp works.

Brussels, which holds the Metallurgique plant, is the next stopping point, and Antwerp, where the Minerva car is produced, the next. From Antwerp, the trip to London will be made by boat, the scheduled stop at the Olympia show being five days. The return voyage is to be started at Liverpool, with the arrival in New York timed for November 18th, or thereabouts.

The trip as outlined, from New York to New York, it is expected, can be made in 39 days, and according to present figures the total cost will not exceed



\$550 per person; this figure is based upon the accommodations required for a party of at least 75 and includes the following:

First-class steamer to port of entry at France and railroad fare to Paris; room, light, service and breakfasts at the hotel in Paris; train transportation, baggage transfer, and hotel lodgings with breakfasts at the hotel in Paris; train transportation, baggage transfer, and hotel lodgings with breakfast, including all service tips, necessary sleeping car accommodations, service of courier for attention to baggage, customs, etc., from Paris to London; first-class hotel accommodations in London, including transportation and baggage transfer to Liverpool; first-class accommodations from Liverpool to New York. All of which figures out at about \$425, the balance being added for extra meals and other nominal expenses that may be incurred.

#### Holmes Becomes Franklin Officer.

Giles H. Stilwell having been chosen corporation counsel of the city of Syracuse. N. Y., and relinquished activity in commercial directions, his place as vice-president of both the H. H. Franklin Mfg. Co., which makes Franklin cars, and the Franklin Automobile Co., which sells them, has been taken by Arthur Holmes, who long has been one of the Franklin engineering chiefs. Stilwell, however, remains a director of the H. H. Franklin company.

Holmes was elevated to the vice-presidency at the annual meeting of the two companies last week, at which time the H. H. Franklin company elected the following officers: H. H. Franklin, president; John Wilkinson, vice-president, and F. A. Barton, secretary and treasurer. These officers and E. H. Dann, Alexander T. Brown and W. C. Lipe comprise the board of directors.

At the same time, the Franklin Automobile Co. chose as its officials the following: H. H. Franklin, president; Arthur Holmes, vice-president; F. A. Barton, secretary and treasurer, who with E. H. Dann comprise the directors.

#### Lloyd Takes Charge of Fischer Motor.

Acting for the new interests which recently acquired the Fischer or Magic motor rights in this country, Robert McA. Lloyd, has taken charge of the newly organized Fischer Motor Corporation of New York City, which succeeded the Motor & Gear Improvement Co. Lloyd was at one time high up in the General Vehicle Co. and later in the International Motor Co.

# TAXIMETER NOW REGRETS IT BACKED RECORDOGRAF

Demands that Seeley Repay \$45,-000 Advanced to "Bolster" Car-Watching Device Business— Claims Misstatements.

Claiming that Walter H. Seeley and another owner of the stock of the recently bankrupted International Delivery Supervision Co. made false representations, the American Taximeter Co. of New York this week filed suit in the Supreme Court for New York county, demanding that Seeley repay \$45,000 which the Taximeter company used in an effort to bolster the Supervision company; the "bolstering" was unsuccessful, for the Supervision company failed several months ago and later its assets were purchased by the Taximeter company for \$12,000.

It is charged that when the Supervision company needed funds representations were made to the Taximeter company that there were numerous contracts on hand for the rental of the Supervision's recordografs, that the latter was a perfected device and that all the business needed was a little more money. According to developments in various other suits connected with the deal the Taximeter company accepted control of the stock and advanced funds.

It now claims that the representations as to the rental contracts were exaggerations, that the recordograf was not a perfected device and that it was wrongfully induced to advance its money.

Other suits have been brought in connection with the Delivery-Taximeter transaction; the Regina Co., of Rahway, N. J., entered the United States District Court in New York City with a claim for \$51,016.47 on an uncompleted contract to manufacture recordografs and, tried to hold up the bankruptcy, the Boston Delivery Supervision Co. demanded the fulfilment of a sort of sub-agency contract and asked damages of \$1,564.17 and Henry S. Mott presented a claim amounting to \$11,000 on notes.

#### Receiver Named for Taxicab Company.

At the request of the Mason Garage Co., Inc., a receiver was appointed this week in the New York City Court for the Loughran-O'Connor Co., which operates a fleet of six taxicabs, with an office at 2463 Broadway. New York City. The garage claims to have secured a judgment for \$190.36 in Municipal

Court. The testimony of David J. O'Connor, the secretary and treasurer of the company, revealed that its six cabs are mortgaged for \$5,000, that they are worth about \$2,000 at the present time, that the office contains only a desk and a chair worth about \$25, and that the company has \$10 in the bank and outstanding accounts amounting to nearly \$200.

#### Storle to Make Rotary Valve Engine.

The Storle Engine Co., of Kewaunee, Wis., which was organized last week with an authorized capital of \$50,000, will manufacture a rotary valve gas engine invented by O. O. Storle, who has been at work on the device for some two years. The new company has taken over the plant of the Storle Valve Co., which is being remodeled to suit its purposes. It has also purchased a foundry to facilitate manufacturing. Storle himself is president of the company which bears his name, O. L. Pierpont vice-president and H. O. Brandenburg secretary and treasurer.

#### Mitre Gears Grind Harshly in Court.

A dispute as to the fulfilment of the contract for 800 chrome vanadium mitre gears is the basis of a suit filed this week in the New York City Court by the Earle Gear & Machine Co., of Philadelphia, against the Klenke Pneumatic Suspension Co., of New York City. The Earle company demands \$1,679.10, claiming this amount is unpaid. The Klenke company answers that the gears were not delivered on time and not according to specifications, wherefore it refused to carry out the contract.

#### Truck Service Concern Changes Name.

The Willys-Service Corporation, Inc., of 427 West 42nd street, New York City, which formerly handled Willys Utility Wagons in the metropolitan district, this week dropped the Willys from its name and hereafter will be the Gramm Service Corporation, Inc. The company has become engaged more in the commercial car garage business than in selling and, while it sells Gramm trucks to some extent, specializes in truck service.

#### Matheson Becomes Chiefly a Memory.

According to the final report of W. C: Shepard, receiver for the Matheson Motor Car Co., of Wilkes-Barre. Pa., of which he was once president, he has paid the creditors a total of \$188.842. At the time of the company's failure, December 20, 1912, its assets were estimated at \$1.000.000 and its liabilities at approximately \$600,000.

# The V Veek's Incorporations

Cairo, Ill.—Cairo Auto Sales Co., under Illinois laws; authorized capital, \$2,-500.

St. Louis, Mo.—Alcorn Automobile & Storage Co., under Missouri laws; to conduct an automobile storage and repair-shop.

Iowa City, Ia.—Welt-Lewis Motor Co., under Iowa laws; authorized capital, \$50,000. Corporators—A. A. Welt and Roy Lewis.

Central City, O.—Barnes Automobile Co., under Ohio laws; authorized capital, \$15,000. Corporators—E. P. Barnes, J. L. Leach and C. V. Lisle.

Sioux City, Ia.—Parkinson Automobile Engine Starter Co., under Iowa laws; authorized capital, \$10,000. Corporators —E. F. Horstman and others.

Sioux City, Ia.—Sioux City Auto Top Co., under Iowa laws; authorized capital, \$10,000. Corporators—E. E. Strickler, R. E. Harrington and G. M. Coller.

Los Angeles, Cal.—United States Carburetor Co., under California laws; authorized capital, \$250,000. Corporators—J. E. Runston, P. Pelligrini and C. A. Maino.

Kalamazoo, Mich.—Michigan Motor Car Parts Co., under Michigan laws; authorized capital, \$30,000. Corporators— John B. Doyle, Oscar Gumbinsky and Edwin J. Dayton.

Chicago, Ill.—Rene Wheel Co., under Illinois laws; authorized capital, \$2,500; to deal in automobile wheels and accessories. Corporators—Edgar Theriault, George Gagne and Lee D. Mathias.

Chicago, Ill.—Puritan Motor Co., under Illinois laws; authorized capital, \$2,500; to deal in motor vehicles and other merchandise. Corporators—S. C. Larson, Alex. E. Nelson and S. T. Johnson.

Kewaunee, Wis.—Storle Engine Co., under Wisconsin laws; authorized capital., \$50,000; to build internal combustion engines. Corporators—O. O. Storle, H. O. Granberg, O. L. Piermont and W. Heck.

Portland, Ind.—Jay County Auto Co., under Indiana laws; authorized capital. \$6,000; to conduct a general motor vehicle business. Corporators—Howard I.. Norris, Otis E. Shafer and Aurie B. Grimes.

Hot Springs, So. Dak.—Hot Springs Garage, under South Dakota laws; authorized capital, \$15,000; to operate a garage. Corporators—James Marty, John S. Fusion and E. R. Juckett, all of Hot Springs.

Hamilton, Ill.—Lakeview Motor Club, under Illinois laws; authorized capital, \$10,000; to conduct and maintain a club for pleasure and recreation. Corporators—John H. Janney, Edwin B. Mauer and Eugene Cohn.

New York, N. Y.—Harlem Taxi Co., under New York laws; authorized capital, \$600. Corporators—Cobie Reich, 56 West 115th street; Raymond S. Schwartz, 400 Manhattan avenue; Edward Goldstein, 141 West 117th street.

New York, N. Y.—Boulevard Renting Co., under New York laws; authorized capital, \$5,000. Corporators—Frederick Mastin, 2004 Bathgate avenue; Margaret Just, 1711 Van Buren stret; Frank H. Scoppa, 2122 Hughes avenue.

New York, N. Y.—Associated Garages, under New York laws; authorized capital, \$110,000. Corporators—Ira B. Lothrop, 245 West 12th street; Eileen T. Levy, 245 West 12th street; Howard B. Alexander, Long Branch, N. J.

Chicago, Ill.—Commerce Motor Car Co. of Illinois, under Illinois laws; authorized capital, \$5,000; to buy, sell and deal in motor cars and other commercial vehicles. Corporators—Albert W. De Latour, Elias Mayer and Charles Rudolph.

Cornwall-on-Hudson, N. Y.—Storm King Garage, under New York laws; authorized capital, \$1,000; to operate a garage. Corporators—James Lewis, Cornwall-on-Hudson; Edward C. Townsend, Idlewild, N. Y.; William Wells, Firthcliffe, N. Y.

New York, N. Y.—127th Street Garage Co., under New York laws; authorized capital, \$5,000; to operate a garage. Corporators—William F. Bullman, 2145 Seventh avenue; George M. Stevens, 155 West 61st street; Howard L. Kelly, 258 West 129th street.

New York, N. Y.—Peter Reidenbach Wagon Works, under New York laws; authorized capital, \$10,000; to build wagons, automobile bodies, etc. Corporators—Margaretha Reidenbach, Susanna

Reidenbach and George C. Reidenbach, all of 104 Eldridge street.

New York, N. Y.—Philadelphia Motor-Mart Co., under New York laws; authorized capital, \$3,000; to deal in motor cars and accessories. Corporators—John Gerosa, 203 East 135th street; Samuel Tullman, 186 Norfolk street; Lillian Stimelsky, 473 Brook avenue.

Watkins, N. Y.—Watkins Garage, under New York laws; authorized capital, \$35,000; to operate a garage. Corporators—George S. Hice, 700 Jamaica avenue, Brooklyn, N. Y.; Newton J. Baxter, 17 Shepherd avenue, Brooklyn, N. Y.; W. Gail Royce, Watkins, N. Y.

St. Louis, Mo.-Mogul Motor Truck Co., under Missouri laws; authorized capital, \$100,000; to conduct a general motor truck business. Corporators—George C. Griffith, P. R. Walsh, Julius Berninghaus, C. S. Cobb, J. T. Hick, Little Rock, Ark.; George W. Hunter.

New York, N. Y.—Auto Signalite Export Co., under New York laws; authorized capital, \$10,000; to manufacture patented automobile devices. Corporators—Adolph L. Incoffs, 805 St. Nicholas avenue; Albert E. Gunn, Port Washington, N. Y.; Henry Donovan, Charles street.

New York, N. Y.—George L. Sullivan, Inc., under New York laws; authorized capital, \$50,000; to conduct a general motor vehicle business. Corporators—George L. Sullivan, Haworth, N. J.; Edward H. Gilley, 141 Greene street; John F. Russell, Jr., 43 Cedar street

New York, N. Y.—Olin, Giberson & Lowy, under New York laws; authorized capital, \$5,000; to manufacture steel balls, ball bearings, automobile accessories, etc. Corporators—John S. Sherman, 88 71st street, Brooklyn; Charles L. Knox, 508 West 171st street; Philip Lindsay, Raritan, N. J.

New York, N. Y.—Bronx Rubber & Auto Specialty Co., under New York laws; authorized capital, \$4,000; to deal in tires and automobile supplies. Corporators—Josephine Mulholland and Jos. A. Mulholland, both of 218 West 71st street; Sidney J. Mulholland, 2600 Marion avenue.

New York, N. Y.—Quick Change Storage Battery Co., under New York laws;

authorized capital, \$500,000; to manufacture storage batteries, electrical goods, motors, etc. Corporators—Stanley G. Sabel, 125 West 58th street; Russell Law, 344 West 72nd street; Leslie Reid, 240 West 11th street.

East Pittsburgh, Pa.—Westinghouse Gear & Dynamometer Co., under Pennsylvania laws; authorized capital, \$1,500,000; to issue licenses to manufacture and sell Westinghouse-Melville-Macalpine gears. Corporators—George Westinghouse, H. T. Herr, T. S. Grubbs and George F. White.

New York, N. Y.—Dinshah Engine Tester Corporation, under New York laws; authorized capital, \$50,000; to manufacture automobile engine testers, etc. Corporators—Judson P. Welsh, 57 East Kingsbridge road; P. M. Richards, 264 Brooklyn avenue, Brooklyn; D. P. Ghaddiali, Hillsdale, N. J.

Yonkers, N. Y.—W. A. Shanahan-Thomson Corporation, under New York laws; authorized capital, \$3,000; to deal in motors, engines, automobiles, etc. Corporators—Walter A. Shanahan, 251 West 87th street, New York; Arthur S. Thomson, 46 Morsemere place, Yonkers; Albert C. Travis, 71 Broadway, New York.

Spokane, Wash.—Auto Transportation Co., under Washington laws; authorized capital, \$500,000; to manufacture the Twentieth Century Endurance Wheel for Automobiles. Corporators—George H. McKinnis, L. E. Neale, A. P. McRae, W. W. Papesh, Charles Z. Seelig, P. P. Weber, A. P. Hutton, F. E. Stone and Herman J. Rossi.

#### Changes of Capitalization.

Akron, O.—Akron Steel Casting Co., from \$10,000 to \$25,000.

Akron, O.—Portage Rubber Co., from \$1,000,000 to \$1,250,000.

Cleveland, O.—National Garage Co., from \$20,000 to \$40,000.

Philadelphia, Pa.—Mecca Tire Co., from \$100.000 to \$500,000.

Columbus, O.—Vehicle Apron & Hood Co., from \$60,000 to \$5,000.

Detroit, Mich. — Zenith Carburetter Co., from \$30,000 to \$40,000.

Springfield, O.—Kelly Motor Truck Co., from \$500,000 to \$5,000.

Detroit, Mich.—Morgan & Wright,

from \$2,500,000 to \$5,000,000.

Buffalo, N. Y.—Buffalo Automobile

Station, from \$10,000 to \$75,000.

St. Louis, Mo.—Wagner Electric Mfg.
Co., from \$1,500,000 to \$1,880,000.

Dallas, Tex.—Dallas Automobile Building Association, from \$5,000 to \$15,000.

# 55% INCREASE IN EXPORTS TO AMERICAN POSSESSIONS

Strength Follows Period of Weakness in Car Buying by Island America—Value Gains \$58,-753—Tire Sales Less.

After having hesitated and moved backward during the early fall, the purchases of American cars by the non-contiguous American possessions—Hawaii, Porto Rico, the Philippines and Alaska—gained substantially during November; the number of cars shipped to these countries was greater by 58 cars, or 55 per cent., and the valuation was larger by \$58,753, or 35 per cent.

The greatest gain in percentage and volume was made by the Philippine islands, which spent \$64,500 more with American car builders and bought 50 more cars. Hawaii decreased its purchases. Porto Rico bought 12 more cars than it did in November, 1912, and paid \$13,125 more for them. Parts lost by \$2,599, or 11 per cent. The average value fell from \$1.579 to \$1.379.

During the 11 months ending with November, 1913 gained over 1912 by 86 cars, or 6 per cent., and \$91,967, or 4 per cent. Parts decreased \$6,092, or 3 per cent. The tires exported in the two Novembers, so far as given by the Federal statisticians, were: Hawaii—1912, \$39,701; 1913, \$29,304; loss, \$9.397, or 23 per cent. Porto Rico—1912, \$22,738; 1913, \$19,500; loss \$3,238, or 14 per cent. The figures in detail follow.

	November			
	1912 1913			
	No.	Values.	No.	Values.
Hawaii—				
Cars	57	\$101,609	53	\$82,337
Parts*		10,722	• • •	6,412
Porto Rico	23	04.040		40.073
Parts*		26,948 10,318	35	40,073 6,307
Philippines-	• • • •	10,316	• • • •	0,307
Cars	. 25	38.373	75	102,873
Parts*		2,732		7,845
Alaska-		-,,	• • • •	.,0.5
Cars	. 1	500	1	900
Parts*		50		659
T-4-1				
Total cars Total parts*	. 106	\$167,430	164	\$226,183
rotal parts	• • • •	23,822	• • •	21,223
Total cars				
and parts		\$191,252	164	\$247,406
		4.,.,	101	<b>42</b> 17,100
	Eleven Months Ending November			
	13	912	19	913
Hawaii	No.	Values.	No.	Values.
Cars	. 561	*004.030		****
l'arts*		\$894,030 71,740	549	\$943,342
Porto Rico-		/1,/40	• • • •	82,847
Cars	. 369	517,595	267	335,776
Parts*		109,468	207	78,202
Philippines-		.07,100	• • • •	70,202
Cars		571,484	625	790,173
Parts*		51,193		65,431
Alaska—				
Cars Parts*	. 15	19.664	27	25,449
Parts*	• •••	4,006		3.835
Total cars	1 392	\$2,002,773		40.004.544
Total parts	. 1,302	236,407	1,468	\$2,094,740
		230,407		230,315

Total cars and parts\*1,382 \$2,239,180 1,468 \$2,325,055 \*Does not include engines and tires.

Crook Swindles Ford Job Seekers.

Taking advantage of the hordes of job seekers who have flocked to the Ford plant in Detroit since the \$5-perday minimum wage was announced, a heartless swindler one day last week appeared on the scene and extracted \$2 each from a number of those who were seeking work and could illy afford even that sum. The crook represented himself as the employment agent of the bankrupt Nyberg Automobile Works, of Anderson, Ind., and mingled with the hungry crowd offering to pay \$3.75 per day at the start and \$5 per day at the end of the first month's work in Anderson.

In order to reach Anderson, however, railway tickets were necessary, and more than 100 men are said to have given up \$2 each for that purpose. When the men put in an appearance at the railway station, supposedly bound for the "promised land," the swindler, of course, was conspicuous by his absence and has not yet been apprehended.

#### "Near" Salesman Causes Two Arrests.

Charged with having advertised for young men to "learn the automobile business and become salesmen," Roscoe G. Houston, aged 23, and William Sandford, 34, of Cambridge, Mass., were arrested last week for the alleged larceny of \$100 from Samuel L. Crocker, of Brookline. Like many other young men, Crocker had ambitions to "learn the automobile business" and when his eye caught the seductive advertisement of Houston and Sanford, who traded as the Marathon Automobile Co., at 823 Boylston street, Boston, he promptly sought them out and invested \$100. When he received no return for the money, he appealed to the police.

#### Two Empires Are Formally Dissolved.

The Empire Tire Co. and the Empire Rubber Co., of Trenton, N. J., have formally dissolved, the necessary certificates having been filed with the Secretary of State. The dissolution, however, is a mere matter of form, as the assets of both concerns were taken over more than a year ago by the Empire Tire & Rubber Co., which was organized for that purpose.

Electric Auto Lite Takes Saxton Lamps.
The Electric Auto Lite Co., capitalized at \$225,000, has acquired and taken over the Saxton Mfg. Co., which last year was organized in Toledo to manufacture automobile lamps. The new owners of the property will continue lamp production.



# In SALESROOM and GARAGE



The C. T. Silver Motor Co., metropolitan distributer of Overland and Peerless cars, has turned its branch in Newark (N. J.) over to the C. L. Fitz Gerald Motor Co., which was formed for that purpose; it is headed by C. Louis Fitz Gerald, former manager of the Packard branch in Newark, associated with whom are Herbert H. De Wilde. formerly with the New York Transportation Co., and William J. McAvoy, formerly a Packard salesman in Newark. The company has taken over the Silver branch at 588 Broad street and will maintain a service station in the old Peerless branch location at 37-39 William street

The R. & L. Co., metropolitan distributer of Garford trucks and Willys utility wagons, is planning to erect a service station in Brooklyn, at Atlantic and New York avenues, near the Brooklyn branch, which is at Fulton street and Bedford avenue; the building will be 60 x 100 feet. The company has other service stations in Newark, Manhattan and The Bronx.

The Newark (N. J.) branch of the Hartford Suspension Co., of Jersey City, has been taken over by J. H. Burnet, the former branch manager, and L. D. Chandler, formerly engaged in the tire business in that city; they will trade as Burnet & Chandler at 311 Halsey street, the former branch location. They will carry all the Hartford products.

The Loveland Co., of Detroit, a used car dealer, has opened a branch in Buffalo, at 671-73 Main street, and in Cleveland, O., at Euclid avenue and 17th street. H. C. Loveland, brother of the manager of the company, is manager of the Buffalo branch and R. S. Merriam, who has been with the company three years, is in charge in Cleveland.

W. E. Schaefer & Sons, of Ripon, Wis., are erecting a two-story garage, 44 x 100 feet, to be ready for occupancy March 15; the present garage of the company, a block from the new one, will be used as a repair and service department. The company handles Chalmers, Cadillac, Buick and Metz cars.

M. E. Remelin, formerly of the Bumiller-Remelin Co., of Cincinnati, O., but who withdrew from that company,

has formed the Remelin Co. and is opening an automobile supply and sporting goods store at 430 Main street; he has leased a three-story building for 10 years at a total rental of \$33,000.

The Wickersheim Implement Co., of Fullerton, Cal., which deals in automobiles, has just taken possession of a new \$8,000 garage, 125 x 145 feet; the formal opening was attended by a parade in which the company's entire line of wares was displayed and in which traveling men played a conspicuous part.

C. A. Forster, former commercial manager of the Maxwell Motor Co., and W. J. Parrish, former head of the Parrish Motor Car Co., of Cleveland, O., have purchased control of the Packard Kansas City Co., of Kansas City, Mo. The business is located at 22d street and Robert Gilham road.

The Stephenson Taxi Co., of which R. R. Stephenson is manager, has opened for business in Crawfordsville, Ind. Two cars have been purchased. The headquarters are on South Washington street in the Stephenson cigar store, which Stephenson also operates.

The Marathon Motor Sales Co. has entered the trade in Kansas City at 3130 Main street; it will distribute Marathon cars in parts of Missouri and Kansas. W. L. Mitchell, formerly stationed at the Marathon factory in Nashville, Tenn., is manager.

E. B. Sutton, formerly connected with the Bolton Auto Co., in Saginaw, Mich., has branched out for himself; he has secured the Reo agency and has opened up at 821-23 Genesee avenue with a garage, salesrooms and stock of tires and accessories.

Frank K. Crowley, formerly manager of the automobile department of J. Colyer & Co., of Newark, N. J., has branched out for himself; he has secured the Maxwell agency and has opened a sales and service station at 233 Halsey street.

Robert C. Cornelius has purchased the interest of H. H. Hohly in the Cornelius-Hohly Co., of Toledo, O. The style hereafter will be Cornelius Auto Sales Co. The company is Northwestern Ohio distributer of the Krit.

Wilbur Hunter and Harry Meyer, gar-

age operators in St. Marys, O., have taken over the supply and accessory store of Charles Wirtz; it adjoins the garage and will be run in conjunction with the latter.

Jonas & Indra, who operated the West Side Garage in Green Bay, Wis., have dissolved partnership; Carl Jonas has purchased Indra's interest and will continue the business with enlarged equipment.

Raoul Sayres has purchased the interest of W. Ince in the firm of Bishop & Ince, in Marengo, Ia. Ince will retire from the business. Sayres has been connected with the trade in various capaci-

G. S. Peckham, of Dun Prairie, Wis., has sold his interest in the garage and real estate firm of Peckham & Beers to Albert Fuhremann; the style has been changed to E. E. Beers & Co.

L. W. Martin, formerly of New York, has entered the trade in Hartford, Conn., as the Hartford Auto Exchange; he maintains a used car salesroom at 583 Franklin avenue.

John A. Bancroft plans to erect a garage in Cedar Falls, Ia. He has purchased the old Lindell Hotel of A. J. Norris and will raze this structure to make place for his garage.

Thomas J. Doyle, formerly manager of the Ford branch in Detroit, has set up for himself; he has the Saxon agency and has located at 368 Jefferson avenue

The Coliseum South Bend Garage & Machine Shop has opened up at 317 East Jefferson street, South Bend, Ind. It also has the Krit agency.

H. J. Ellis, of Brooklyn, Wis., is about to open a garage; he will locate in the building where John Oregard formerly conducted a store.

The Havers Motor Car Co., of Port Huron, Mich., has opened salesrooms in Detroit; they are located at 1225 Woodward avenue.

Grover Vogelsberg and Leo Stoll, of Bloomington, Wis., are preparing to build a garage; they also will secure an

The Howard Auto Tire & Repair Co. has entered the trade in New Haven,

Th

'n

Conn. It has located at 1114 Chapel street.

H. Blanchard Earnest, of Burlington, N. J., has been granted authority to build a garage; it will stand on Broad street.

The Graham Auto Co., of Perry, Ia., has sold its business to James Bennett, formerly of Rippey, in the same State.

Jacob Roth, of Erie, Pa., plans to erect a garage on 10th street; he is an automobile dealer.

D. J. Henson has formed a garage company in Taneytown, Md. A new building will be erected.

Harris & Cate is the style of a firm which is about to open a garage in Umatilla, Fla.

E. C. Roberts of Corona, Cal., has entered the trade; he has secured the Ford agency.

E. R. Metheany has opened salesrooms in Cadillac, Mich; he has the Overland agency.

Allen & Hardy have opened salesrooms and a supply store in Monticello, Ark.

L. A. Oyster, of Savanna, Ill., has entered the trade as a Ford agent.

Edwin Kelly, of Wildwood, N. J., plans to build a garage.

Olaf Hansen is about to open a garage in East Chester, N. Y.

Reife & Knell, of Dixon, Ill., are erecting a repair-shop.

William Ives is about to build a garage in Salem, Mass.

Millhouse Bros. have opened a garage in Scranton, Pa.

Titus & Stuffer have opened a garage in Clinton, Ia.

E. All plans to open a garage in Elyria, Kan.

#### Recent Losses by Fire.

Ossining, N. Y.—Grand Garage; destroyed. Loss not stated.

Lynn, Mass.—Suffolk Garage, Suffolk street; damaged. Loss, \$75,000.

Houston, Tex.—Andrew Dow, 1801 Main street; garage damaged. Loss, \$1,000.

New York, N. Y.—Peerless Tire Co., 1588 Broadway; stock and fixtures damaged. Loss not stated.

Edgewater, N. J.—Valvoline Oil Co.; plant damaged and part of contents destroyed. Loss, \$300,000.

Baltimore, Md.—Automobile College, Auto Repair Co., Liquid Filler Co. and Auto Electric Co., 1300 North Charles street; building and contents damaged. Loss not stated.

## PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few Leave the Industry.

Gus A. Boyer, who until recently was in the automobile trade on his own account in San Francisco, has joined the John F. McLain Co., the Franklin dealer in that city. Boyer is no stranger to the Franklin car, however, as he sold it on the coast several years ago.

C. G. Bleasdale, formerly of Cleveland, has been appointed manager of the Regal Motor Car Co.'s Detroit branch; he has been connected with the automobile trade for 15 years, having been connected with the Maxwell branch in Cleveland for eight years, the last five of which he was manager.

C. Q. Vaughn has been promoted to the management of the Toledo branch of the United States Tire Co. Previously he was a traveling representative of the company in that district. Vaughn has the unusual distinction of being an exmayor, having served two terms in that capacity in his home town, Forest, O.

W. J. Mead, one-time vice-president and general manager of the Olds Motor Works, of Lansing, Mich., and later the head of the Amplex Motor Car Co., of Mishawaka, Ind., has returned to the industry after a short absence. He has become the head of the Chevrolet Motor Co. of Illinois, with headquarters in Chicago.

H. M. Leonard has been appointed general superintendent of the Crescent Motor Co., of Carthage, O., which several months ago took over most of the assets of the Ohio Motor Car Co. Previously Leonard was factory manager of the Jackson Automobile Co., of Jackson, Mich. He also gained experience with the Cutting Automobile Co. and the Lewis Spring & Axle Co.

#### Minor Business Troubles.

On the petition of Amanda Musselman, Thomas H. Morrow has been appointed receiver for the J. S. Stevens Auto Co., of Cincinnati, O. She seeks to recover a judgment of \$2,000; it is stated that the company is closing up its business.

Charles Weigel has been appointed by the Insolvency court receiver for the Cincinnati (O.) Alco Motor Car Co., upon the petition of Walter H. Peters, a stockholder. Peters says the company was formed to operate a garage and repair business but failed to attain success and has done no business since August last.

Receivers have been appointed for the D. C. Walker Auto Co., of Baltimore, Md., on the petition of the American Sign Co., which has a claim of \$162, and the Century Tire Co., which claims \$24.84. The assets are said to consist of two automobiles and a few outstanding accounts. Dikon C. Walker was president of the company, which was located at 1919 North Charles street, and had several unhappy experiences prior to his failure, including a suit for alienation of affections and a divorce.

#### New Departure Men Go Higher.

Charles T. Treadway, for several years treasurer of the New Departure Mig. Co., of Bristol, Conn., has been elected chairman of the bord of directors, and De Witt Page, who, almost since the inception of the company, has served the company in various capacities, latterly as secretary, purchasing agent and sales and advertising manager, has been promoted to the post of general manager. The added responsibilities and honors of Messrs. Treadway and Page have been rendered possible because of the desire of President Rockwell to relieve himself of certain of the managerial details.

#### Two More Join Silent Majority.

Robert M. LaDue, manager of the La-Due Auto Top Mfg. Co., of Toledo, died at his home in that city last week after a lingering illness. He was 33 years of age and is survived by his widow. His remains were interred in Monroe, Mich.

Emory Olds, aged 60, died suddenly of apoplexy on Monday last at the winter home, in Sea Breeze, Fla., of his brother, R. E. Olds, the head of the Reo Motor Car Co., of Lansing, Mich. He was in conversation with his brother when he suffered the fatal stroke.

Firestone Again "Scouring" the West.
R. J. Firestone, sales manager for the
Firestone Tire & Rubber Co., is making
a general tour through the western half
of the United States. Practically every
important city west of the Mississippi
is on his route. He left Akron January

Supply Company Out of Bankruptcy.

16 and will be absent six weeks.

The United Auto Supply Co., of 88 Chambers street, New York City, which went into bankruptcy several months ago, has been discharged; its liabilities were \$15,000 and its assets about \$4,000.



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"You are making a wonderful paper of Motor World."—P. P. Willis, Indianapolis.

#### AUTOMATIC CONTROL NOT A LUXURY.

Recent developments in gear shifters and other automatic or power-operated means for controlling the functions of an automobile which have made the "push-button car" possible and practicable, though usually viewed as a luxury, are very much more than that, for automatic control rightly may be considered a step in the "safety first" direction.

It has been demonstrated scientifically—as well as unscientifically—that not a few men are unable to drive cars because they are unable to cause their minds and muscles to work together. Needless to say, such coordination is essential to the safe operation of a machine. Automatic control makes driving a possibility for such persons because it makes it possible to set the controlling system in advance, so that when the time comes for a gear change, for instance, there will be nothing to do but press the clutch pedal—nothing to force him to think, or fumble or to distract his attention from steering, to the peril of the car and its occupants.

Automatic control also tends to benefit the average driver who has no apparent difficulty in making his

limbs obey the commands of his brain. However skilled a man may be, it is impossible for him to use his wits to the best advantage and, simultaneously perform more or less strenuous muscular work. The control of a big car in a sudden emergency often does involve real exertion at the identical instant when the driver must make the best possible use of his wits to meet the conditions and escape unscathed.

It may be considered, then, that automatic control, necessitating but a few twitches of the fingers and permitting even this to be done partly in advance, leaves the driver unhampered in the exercise of his intelligence. It needs but a trifle to eliminate the hair's breadth that often separates safety from disaster, and if automatic control will enable a driver to keep on the right side of that narrow margin even once, when the danger is serious, it will be well worthy of its place in the car as a potent factor that makes for safety.

"I like to read Motor World because I feel it is reliable."—J. N. Dean, proprietor Reo Automobile Garage, Denison, Iowa.

#### PROTECTION AGAINST CAR THIEVES.

Stealing a motor car and successfully disposing of it seem such difficult matters that few motorists give the subject of theft a second thought; but that thieves are equal to even such seemingly difficult tasks is abundantly proved by the police records. In fact, the theft of automobiles has assumed such proportions that the insurance companies which deal with them are genuinely alarmed.

In the nature of things, the average car must be left unguarded for long periods on many occasions, and though it may not be possible to wholly circumvent the thief the use of a lock of some sort would greatly reduce the chance of loss. Such locks are in great variety, and yet the car to which one is applied is a rare sight. Possibly if the insurance companies made their use an object their sale would greatly increase, but as it is it is certain that very many more of them would be sold if they were properly displayed and otherwise called to the attention of car owners by dealers and supply men who handle such accessories.

There are so many of these forms of security-locks which secure the ignition, the fuel, the steering gear, the clutch, the gear shift or the brake that some one of them can be made to constitute a strong appeal to the average car owner. Why more dealers do not realize the fact and make the most of their opportunities is one of those many things that is hard to understand. If such sales are good for the dealer they are even better for the owner.

"I wish to express my appreciation of the wonderful improvement in Motor World. I now regard it as by far the best dealers' paper."—R. C. Crowthers, Cincinnati.

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### MAKERS AND "USERS" OF THE CYCLECAR ORGANIZE

Each Forms a National Association
—Manufacturers Adopt "Three
Class" Definition of the
Little Vehicle.

Although the number of bona fide manufacturers actually producing cyclecars is best represented by a large interrogation point, and though there are but four near-cyclecar clubs in America, both the Cyclecar Manufacturers' National Association and the Cyclecar Association of America were formed during the Chicago show.

Men who "write things" and who are chiefly responsible for the cyclecar "hurrah," were conspicuous at the birth of both organizations, of which they were prime movers. One of them was elected secretary of the Manufacturers' association and three of the others shared the presidency, vice-presidency and the secretaryship of the Cyclecar Association of America, which is made up of the clubs organized by the three men of their respective cities, and none of whom, at last accounts, had so much as acquired a cyclecar.

W. H. McIntyre, of the Imp Cyclecar Co., of Auburn, Ind., which is the only one that has produced more than a pint of the little vehicles, was logically elected president of the Manufacturers' association. The other officers are as follows: H. J. Stoop, American Cyclecar Co., Bridgeport, vice-president; W. B. Stout, Stout Cyclecar Co., Chicago, sec'y; J. P. LaVigne, LaVigne Cyclecar Co., Detroit, treasurer; R. W. Phelps, Zip Cyclecar Co., Davenport, Ia.; H. J. Tiedeman, Dudly Cyclecar Co., Menominee, Mich., and R. C. Albertus, Mercury Cyclecar Co., Detroit, directors.

The officers chosen by the Cyclecar Association of America are: Charles P. Root, Chicago, president; R. F. Kelsey, New York, first vice-president; Fred Mertz, Indianapolis, second vice-president; J. P. LaVigne, Detroit, third vice-president; F. E. Spooner, Detroit, secretary, and Chester E. Ricker, Hoosier Cyclecar Club, treasurer. The directors chosen are Joseph Anglada, New York; O. R. Hoolf, Chicago; R. C. Albertus, Detroit, and George T. Briggs, Indianapolis.

What constitutes a cyclecar was the chief problem with which the manufacturers dealt. They wrestled with it for a long time and finally split the definition into three parts, at least one of



Jan. 31-Feb. 7, Minneapolis, Minn.— Minneapolis Automobile Trade Associations' seventh annual show in National Guard armory.

Feb. 2-7, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's pleasure vehicle show.

Feb. 3-7, Montreal, P. Q.—Montreal Automobile Trade Association's commercial vehicle show.

Feb. 3-7, Kalamazoo, Mich.—Kalamazoo Automobile Dealers' Association's fifth annual show in the State Armory.

Feb. 4-7, St. Joseph, Mo.—St. Joseph Automobile Show Association's Show.

Feb. 7-12, Seattle, Wash. — Annual show in the State Armory.

Feb. 7-14, Cincinnati, O.—Automobile Trade Association's show in Union Central Life Building.

Feb. 9-14, Portland, Me.—Show in City Hall Auditorium.

Feb. 9-14, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's commercial vehicle show.

Feb. 9-14, Grand Rapids, Mich.—Fifth annual Western Michigan show,

Feb. 11-14, Louisville, Ky.—Louisville Automobile Dealers' Association's show in the Armory.

Feb. 14-21, Pittsburgh, Pa.—Pittsburgh Automobile Show Association's show in Exposition Hall.

Feb. 16-21, Kansas City, Mo.—Annual show.

Feb. 16-21, Toronto, Ont.—Toronto Automobile Trade Association's 10th annual show in Transportation and Horticultural Buildings.

Feb. 16-23, Memphis, Tenn.—Automobile Association of Memphis's show.

Feb. 17-20, Sioux Falls, S. D.—Sioux Falls Automobile Dealers' Association's second annual show in the Auditorium.

Feb. 17-21, Salt Lake City, Utah—Annual show in the Keith-O'Brien building. Feb. 18-21, Bloomington, Ill.—McLean

County Automobile Club's show.

Feb. 18-21, Easton, Pa.—Automobile

show under auspices of Company I, 13th Infantry, N. G. P., in the Armory.

Feb. 18-25, Albany, N. Y.—Albany Automobile Dealers' Association's pleasure vehicle show in the Armory.

Feb. 21-28, Newark, N. J.—New Jersey Automobile Trade Co.'s show.

Feb. 21, Los Angeles, Cal.—Vanderbilt road race under auspices of the Western Automobile Association over Santa Monica course.

Feb. 21-March 4, Cincinnati, O.—Automobile Dealers' Association's show in the Music Hall.

Feb. 22-March 1, Hartford, Conn.— Hartford Automobile Dealers' Association's show in Park Casino.

Feb. 23, Los Angeles, Cal.—Grand Prize road race under auspices of Western Automobile Association over Santa Monica course,

Feb. 23-25, Albany, N. Y.—Albany Automobile Dealers' Association's commercial vehicle show in the Armory.

Feb. 23-28, Danville, Ill.—Automobile show.

Feb. 23-28, Omaha, Neb.—Omaha Automobile Show Association's show.

Feb. 24-28, Syracuse, N. Y.—Syracuse Automobile Dealers' Association's sixth annual show in State Armory.

March 2, 3, 4, Cincinnati, O.—Automobile Dealers' Association's commercial vehicle show in Music Hall.

March 2-7, Utica, N. Y.—Utica Automobile Club's automobile show in the State Armory.

March 3-6, Grand Forks, N. D.—Fifth annual show in the Auditorium.

March 3-7, Fort Dodge, Ia.—Fort Dodge Dealers' Association's third annual show in the State Armory.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics' Building.

March 9-14, Des Moines, Ia.—Automobile Dealers' Association's annual show.

March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics' Building.

March 21-28, St. John, N. B.—New Brunswick Automobile Association's Maritime show in the Armoury.

April 9-15, Manchester, N. H.—Automobile show.

which encroaches on the real automobile. The three parts are as follows:

Cyclecar-Motor, up to 70 cubic inches; weight, under 750 pounds.

Light car—Motor, 70 to 100 cubic inches; weight, 750 to 950 pounds. Small car—Motor, 100 to 125 cubic inches; weight, 950 to 1,150 pounds.

#### MOTOR WORLD

## **ELLIOTT EXPERIENCES**"THAT DRAFTED FEELING"

One-Time Secretary of A. A. A. in Touch With "Secessionists"— Confesses He Thought He Would Be "Called On."

Though not everyone suspected it, Frederick H. Elliott, one-time secretary of the American Automobile Association, has "often felt that sooner or later he would be again drafted into the field for organizing a new national motor association." He himself says so.

He disclosed his unsuspected feeling to the Cincinnati discontents who recently withdrew from the A. A. A., and that Freddie is not averse to "jumping to the Federal league," so to speak, is indicated by his professed willingness to "discuss the situation with the gentlemen who, from time to time, have approached me in regard thereto."

When Elliott left the A. A. A., nearly four years ago, he carried an axe with him, but until the Ohio-Connecticut secessionists came out in the open with the suggestion of an outlaw organization, designed to put the A. A. A. out of business, Elliott did not permit the public to gaze at the implement.

Meanwhile, however, he has discovered the beauty of "organizing things" to which at least one salaried office or bureau is attached. After serving the Touring Club of America, he saw the great need of a national organization of automobile dealers and proceeded to organize it, but he dropped the dealers for a "travel club."

Apparently the foads the club traveled were not highly prosperous, for only recently Elliott projected and organized the Safety First Society. In his letter, expressing his unsuspected feeling that he might again be "drafted," he was so sure of the job that in advance he stated that he would be elected general secretary of the society. He says it is full of possibilities but, despite the fact, he is plainly not averse to linking up with any one who has an anti-A. A. A. organization in prospect or in tow, but, believe him, it must be "representative and democratic."

How Elliott has developed since the A. A. A. door closed behind him is indicated by his communication, in which he discloses "that drafted feeling." It is as follows:

"I have for several years been a student of public safety and it has been my one desire to get together an organization representing kindred interests, all of which were striving for something in the interest of public welfare, but as a matter of fact were not accomplishing much.

"After a year's work, which has been a great pleasure to me, I have succeeded in perfecting an organization in Greater New York which is second to none in the whole world, and on Monday night next I shall be elected general secretary of the Safety First Society, which has the brightest future and possibilities of any body with which I have ever been identified

"At the same time I have often felt that sooner or later I would be again drafted into the field for organizing a new national motoring association, and will say frankly that if the proposition can be presented in the proper way, I shall be very glad to discuss the situation with the gentlemen who from time to time have approached me in regard thereto.

"There is no reason why a national automobile council, similar to the one in Great Britain, can not be formed in the United States, and there are enough motoring organizations to warrant its success in every way. I believe that there are enough clubs interested today to start such a body, with a membership aggregating 15,000 to 20,000, if not more.

"Certainly, the successful and prominent automobile clubs, which are at present not associated with any national body, should take up this subject for early discussion, because through a really representative national automobile council much could be accomplished, and this is one of the few things that remain to bind together the local clubs. But it must be representative and democratic, if such a national automobile council is to be successful and accomplish any direct benefits for its constituted membership, whether in Maine or California.

"I feel that the proper way to inaugurate a national automobile council will be to arrange for a conference of the representatives of the clubs and associations interested at some advantageous point; then and there agree as to what they think best to do and engage somebody to do it. Frankly, in my mind, there is only one answer as to the result of what can be accomplished."

#### Money Orders to Be Payable Anywhere.

Under a bill passed January 30 by the United States Senate, money orders will be payable at any post office; heretofore they have been payable only at the office on which they were drawn.

## SALESROOM AND GARAGE ONE OF BEST BUSINESSES

Southern California Club Plans to Imitate Police Methods—Would Send Information About Stolen Cars Broadcast.

In an effort to check the entirely too prevalent stealing of automobiles in the Bear State, the Automobile Club of Southern California plans to establish an automobile clearing house which will keep track of cars just as the State Clearing House for Watches, at Alameda, keeps tabs on timepieces; the proposed clearing house for cars would be located in Los Angeles.

Under the most successful stolen property systems employed by police bodies, the theft or loss of each article is recorded, as is the sale to a second-hand dealer or pawnbroker; this information is circulated among various cities and the compartison of data seldom fails to detect the sale of stolen property if an attempt is made to dispose of it through the regular channels.

It is estimated that \$60,000 worth of stolen cars are at present unrecovered in California, most of them being of low and medium price; the more costly cars, it is stated, generally have theft preventing devices, whereas the less costly vehicles do not so frequently carry these devices.

In connection with the agitation against automobile thieves, Chief of Police Wilson, of San Diego, proposes that the registration of cars at county lines be made compulsory; he would have a heavy fine imposed for failure to register when passing from one county into another and believes his scheme would meet with the success that has attended it in some foreign countries.

#### World Uses 2,000,000 Automobiles.

There are 2,000,000 automobiles in use in the world, according to Secretary of State Mitchell May of New York, who now has supplemented his recent report on the number of cars in use in the United States; his figures cover registered cars insofar as statistics are available.

The United States has more than twice as many as Great Britain; the figures are: United States, 1,127,940; Great Britain, 425.838; ascertained total of other European countries, 273,511; estimated total from other countries, 92,500; the grand total therefore being 1,919,789 registered cars.



#### **ONE SHOW BUT TWO EXHIBITS**

How the Salesroom Window May Be Made to Bring Added Publicity During Show Week—What One Chicago Dealer Did.

How to make a window display stand out during show week in your town is a matter worthy of careful and painstaking study. If you have a good exhibit at the show it places you on a par with everyone else; but if, in addition to an exceptionally good show exhibit, you succeed in getting an effective window display, the two are sure to be linked together in a way that means results in the shape of attention and orders.

#### Made Show-Goers Stop and Look.

Of all the dealers in Chicago the Centaur Motor Co., which sells Jeffery cars, was perhaps most successful in this particular element of merchandising during the recent show. The plan was so simple and so efficient that it will undoubtedly be employed elsewhere. It has elements of interest that make it a good window display at any time and the materials are such that almost any dealer could duplicate them. The Centaur store is situated on Michigan avenue, near 23rd street. This is some eight blocks or more south of the Coliseum, too far away to get the attention of any but residents in the south or southwest end of the town. How to arrest the attention of the thousands of motorists who daily and nightly drove up or walked to the show from the north end-that was their problem

They solved it by temporarily renting a vacant store on Michigan avenue about midway between the Coliseum and the center of the city. Here, in the window, they erected a huge shadow box with a wide gilt frame. The box was lined with crimson plush and illuminated by electric

lights just like the pictures hung in art museums. The Jeffery car was placed in this box, a neatly lettered sign back of it told what it was—and there you had a complete and interesting picture. It was so compelling that every night a crowd stood before the window and took in the details and hundreds of motorists slowed their cars to take a look. It was a display out of the ordinary, and those who saw it could not help but be impressed by its naturalness and its effectiveness.

## SHAPING THE SALES TALK TO FIT THE MAN WHO BUYS

Tucked away in one of the acts in "Potash and Perlmutter," now running at Cohan's Theater in New York, is a little parable for the automobile merchant.

Of course, everybody knows that the business of Potash and Perlmutter was the manufacture of women's outer garments.

During the scene referred to a customer comes in and, after looking over the garments "on living models," is about to leave in disgust, having found nothing that he thinks will prove a seller in his market. In a few seconds, during his temporary absence in the factory, the clever designer hurriedly makes a few changes in the garment, so that the instant the customer sees it he is ready to buy and in a few moments has placed his order for several thousand dollars' worth.

#### Making Arguments More Palatable.

The same materials were used, the same model, but a different twist here and there and, lo! the picture is different; and what a moment ago was refused is now extremely acceptable. Price is no object.

Of course, you can't change an automobile over in a few moments. But a clever salesman, the instant he begins to

read a customer's mind, can redesign his arguments so that the same fundamentals will have a different dress and be far more palatable to the customer. It means making a close study of the customer with your whole mind on the matter and instant action the minute he gives you a lead. Never any changing of facts, but a rearrangement of the ornamentation of your argument, so to speak, and a man that had no interest a few moments ago buys your car. Easy? No, hard, but therefore worth thinking over.

## HOW DO YOUR SALESMEN HANDLE UNKNOWN CALLERS?

Supposing a prospective buyer came into your store and asked for the salesman who had been calling on him and, finding him out, left his name without saying who he was or where he was from, would the salesman inquired for be sure to get the name and get it that same day if he were in town?

What is the understanding or plan in your establishment on this point? Does it cover the ground efficiently? Is there a chance that the man might come in and leave his name and the man he left it with forget it? Have you a definite office rule covering this point?

Some dealers have developed the team work or "firm" spirit in their places of business to such a point that every man is interested in the other man's work and anxious to help him know it is all for the firm in the end; there the name would be recorded and placed on the salesman's desk with whatever helpful information could be elicited from the visitor. In other places men have been known to come and go-some of them live prospects-without anyone taking the pains to find out who they were and what they wanted. If such a thing could happen in your store-well, maybe it couldn't, but, just the same, it might pay to investigate.



## KEEPING ONE'S CREDIT SAFE

Good Financial Rating Business Man's Most Valuable Asset—The Dealer Who Made a Sacrifice That Paid in the End.

"Keep your credit good." There is more to that bit of simple advice, written to a young dealer by his friend and counselor than can be compressed into almost any other four words. In the automobile business, as in any other business, a man's credit is his most valuable asset.

It cost a dealer several thousand dollars to take care of an obligation thrust upon his shoulders through the fault of another dealer with whom he had business dealings. He could have crawled out and lawfully escaped his obligation, but if he had done so it would have ultimately hurt his credit. He remembered the advice written to him by a wise and successful friend many miles away, "Keep your credit good," and he paid the money without a whimper.

#### Put Off Buying a Coveted Home.

It meant going without a new home that he had been working for and planning for for a long time, but—he kept his credit good. The result of his prompt action was that local bankers took a closer interest in him than ever before, and aside from his business line of credit he was frequently invited to join the crowd of local moneyed men and share in some of their melons.

No one ever knew what it cost him to "keep his credit good" and he will never know how much good luck it brought him. He says keeping his credit good has meant everything to him, and he ought to know. Today, before he makes a move of any kind in his business he looks at it from the standpoint of "How will this affect my credit?"

It is a mighty good plan—and the man who keeps his credit good has little to fear—for his business friends and associates believe in him—that is the most substantial basis of credit the world knows.

## DANGER OF PRESUMING ON IGNORANCE OF PROSPECTS

Give the other fellow credit for knowing something. You may know much less about cars than he does. He may look as if he knew nothing and say very little, but he may have owned 15 cars before you started in the business. That may develop as you proceed—but in the early stages give him no opportunity to think you are trying to rub it in. You might do it then, accidentally; if you watch yourself in the beginning, however, there is little chance of your doing it later.

#### Dampened the Prospect's Interest.

The salesman of a Chicago concern started to tell a stranger who had come in to look at his car, all about it. When he came to the axles he mentioned a certain familiar name and then remarked that it was one of the best axle concerns in the country. The prospect felt as if he looked fairly intelligent and he wondered how he could have escaped knowing about this axle maker; moreover, he had owned and used at least three cars with the axles mentioned. He said nothing, because the salesman talked so fast he gave him no chance. He had felt pleasant when he came in; now he began to feel hot and crusty. The salesman began to put on more steam, but he could no longer get the prospect's attention. He walked around the car, looked it over without regard to the salesman's spiel, made a few memoranda and said he had an appointment and would have to be excused.

He came in later and bought a car

—from the proprietor—and the salesman is wondering to this hour why he didn't figure in the deal.

## TO MAKE TELEPHONE PLAY PROPER PART IN BUSINESS

So much business is done over the telephone today that it pays to give close attention to the handling of this little instrument by your employes. You are particular over the neat, attractive appearance of your letters; you want them to be well written and carefully worded. You desire them to leave a pleasing impression. You want them to represent you, not to misrepresent; that is the right idea. Every point of contact with the public should be frequently and intelligently studied. That brings us back to the telephone.

Did you ever notice how your employes handle people over the 'phone? It is an important point. Intelligent and courteous telephone service means big things for any establishment. Thirty thousand dollars' profit in three years—half of it traced directly to 'phone orders intelligently handled so as to bring the customers back—that is the dollars-and-cents record of a merchant who studied the 'phone situation and handled the matter so as to secure to his customers "Intelligent 'Phone Service."

#### Creating Desire the Salesman's Work.

"Nobody wants to buy now." Doesn't it sound like a silly one when you write it down? Of course they don't. They never do. If they wanted to buy there wouldn't be any room for salesmen. They would just come after the stuff. It's just because they don't want to buy that salesmen have a job and a right to get the big plums. It is up to the salesman to create the desire and furnish the order blank and the quill to write after he has built the will to write.

### SHAFT WORKER'S SQUARE; HOW TO MAKE AND USE IT

Special Tool That Saves Time and Trouble — Marking Off Keyways and Squaring Cranks and Connecting Rods.

Ordinarily the repairman who has two or three good steel squares and knows how to use them can get along all right in 99 cases out of 100. If the tools do not exactly suit the job in hand he uses a little extra gray matter and makes the apparatus at hand answer the purpose. Once in a while, however, it happens that a man has a good deal of special work of one kind and another, and to such a man special tools adapted to the work are of no small value, saving much time and trouble and helping considerably in obtaining good results.

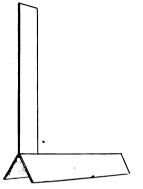
To go back to squares, there is not really a great deal of difficulty in using an ordinary square on a shaft, provided the square has a heavy base, as have regular machinists' squares; but for giving the most satisfactory service on shaft work there is nothing like a special square made for the purpose. The great difference between such a square and the ordinary type is that the shaft square has an angle-steel butt which can be laid on the shaft and will adjust itself perfectly and steadily. The apex of the angle points upward and the blade is set in one end, as the picture shows.

The making of such a tool is not particularly difficult to a skilled mechanic. After having determined the dimensions the first proceeding is to clean up the piece of angle steel inside and out. If it is possible to get the inside dressed by milling or otherwise, it will save a lot of hand work. Otherwise it will be necessary to true up the surfaces rather roughly, both sides, and then set the blade. This is done by making a sawcut in one end of the angle steel of a depth equal to the width of the blade, fitting the blade in closely and straight. and brazing it in place. The brazing must be carefully done, both to make a firm job and to keep the blade in its proper position

After brazing, the real fine work commences. The inside of the angle steel should be made perfectly true. The procedure is to true up one surface with the aid first of a straight-edge and then with a surface-plate, and then work from the true surface to finish the rest, taking the other inside surface next in order. This must be perfectly uniform in its angle

with the first surface throughout its length, and though it does not matter particularly whether it is a right angle or not, it is much more convenient to make it so because part of the work can be done with a good square. If the inside of the angle is made as it should be it will be possible to use the square on shafts of almost any size.

The outer surface of the angle is not of as much importance, except that the apex of the angle must be perfectly parallel with the inside; in other words, when the angle is laid on a shaft the apex must be truly parallel with the shaft. Also the edges must be parallel with the apex and, of course, with each other. The last operation is the truing up of the edges of the blade, which is done just as in the case of an ordinary square. An easier way to make such a square is to



SQUARE FOR SHAFT WORK

cut away all of the angle steel except at the ends, where an inch of the metal is left intact, and at the apex, where enough metal is left to form a strong connecting link between the ends. Then it is necessary only to true up the short "legs" at each end, the apex and the blade.

A square so made, however, lacks one valuable feature of the square made by the more tedious process. It cannot be used as a key-seat rule. The first described tool can be used for ruling parallel lines on shafts for key-seat marking or for any other purpose requiring true "laying-off" of this sort. The tool will, of course, lie true on the shaft and the edges will, if properly finished, guide the scriber truly.

The square is useful for a variety of purposes, such as testing the truth of pistons and connecting rods, trying the truth of cranks, laying off radial lines on wheels, gears and so on. Occasionally an attachment is fitted whereby a steel point can be attached to the blade at any point and held with a thumb-screw. This

permits the use of the tool as a sort of compass for describing circles or arcs on wheels or gears already mounted and therefore hard to mark without some such tool.

#### Fraud in De Schaum's Cyclecar Scheme.

Much to his regret, W. Andrew De Schaum, who has promoted many things in many places, will have to return the money to all those who sought to invest in his latest project, the Automobile Cyclecar Co., of Detroit. The decision warendered by Justice Richter, of that city in the suit brought by Joseph Kobitsky, to recover \$500 he had invested, and who wearied of waiting for something tangible.

In his defense, De Schaum urged that he had sold not stock but "memberships." This defense was bowled out by the court, who stated that the money has been secured by fraud and misrepresentation, one of the misrepresentation being that orders for 60,000 cyclecars were in prospect, although the contract did not specify a fixed time in which the company must be incorporated.

#### Ætna Offshoot Disburses \$115,000.

During the comparatively few months of 1913 in which it had existed, the Automobile Insurance Co. of Hartford, Conn., which is an offshoot of the Ætta Life, disbursed \$3,666.62 to its policyholders, \$1,598.38 for taxes and \$19,628.37 for other purposes. The item "Excess of premium and interest income over disbursement, \$90,700.87," brings the total disbursement to \$115,598.24.

Its income during the corresponding period was made up of \$106,883.28 premiums, and \$8,710.96 interest. Its total assets, as of January 1st, were \$693.982.72, of which \$530,000 is represented by stocks and bonds and \$105,642.95 by cash. Its liabilities, excluding surplus to policy holders, \$623,012.27, amount to \$70,970.45, of which \$45,542.12 is represented by premium reserve.

#### Striking Mail Chauffeurs Go to Jail.

Eleven chauffeurs who used to drive the motor trucks which carry the United States mails in New York City and who instituted a strike several months ago have changed their minds on that phase of the labor question; striking against a corporation is one thing and striking and holding up the mails is a wholly different matter. So far as the chauffeurs are concerned, the principal difference is that in the Federal court in New York City last week the 11 were sent to jail for from two to 18 months. The charge was conspiracy to obstruct the mails.

## BUSINESS VIEWPOINT OF "PASSING THE BUCK"

## Reilly Is Unable to Locate a Man Who Will Listen to His Complaint— Dodging Responsibility and How It Reacts on the Business of the Man Who Dodges—Characters of Liliputian Stature.

With a half dozen 6 x 3½ booklets in his hand, Reilly was making his second visit to the shop of the Harris Printing Co. By this time everyone was "wise to who he was" and everywhere he went everyone seemed unusually busy; when the shop superintendent saw the automobile dealer emerge from the front office the printer made a strategic flank movement behind a row of cases and vanished down the back stairs.

"Where's the superintendent?" Reilly inquired of a man who was too busy

"The 'super' is very conveniently 'out' and I'm not going to look for him," calmly replied the dealer. "Furthermore, I'm not going any further than you. Yesterday when I came in and told John that the job would have to be done over because you made two or three bad 'bulls' he said I would have to see you.

"Today I come to see you and you say I will have to take it up first with the 'super' who is part owner of the business. When I go to find the 'super' he's 'out.' If I had found him he probably

these booklets here with the mistakes marked in that top one and, instead of me chasing from one to the other, you fellows can get together and make your decision. And, as I said before, if I don't hear from you by day after tomorrow I'll take it for granted that you don't care to do anything about it. And if such is the case you needn't bother to sendoup the bill."

With this ultimatum the dealer walked out of the office door and down the stairs and drove on. The coast being



EVERYONE SEEMED UNUSUALLY BUSY AND THE "BOSS" PRINTER VANISHED DOWN THE BACK STAIRS

jiggling and peeking under a form to notice him for several seconds.

"Oh, the superintendent?"—the man looked searchingly about the shop—"I guess he just stepped out. He ought to be back in a minute or two."

#### Reilly Tries to Locate the "Super."

Of course, the printer didn't know the "boss" was conveniently located two doors away, where he could see when the Reilly car left the front door; it is assumed he didn't know, because if he had known he probably would have said something about it.

Reilly watched the jiggling operation for a moment, then turned and went back to the front office where young Joe Harris, the manager, was very, very busy.

"Joe," he said, depositing the booklets on the desk, "I'll leave these here. If you fellows don't figure out by day after tomorrow what you're going to do about it I'll get the job done somewhere else." "Couldn't you find the 'super'?" would say I would have to see John, and John would start me around again. Once around is quite sufficient. Now, you ought to know just as much about this as anyone else in the place, and I want to know what you're going to do."

In the "passing of the buck" around the establishment it had been growing warmer by friction of many hands, and now Joe grabbed it as if it were a hot rivet. His face flushed and he showed his embarrassment.

"Why-why-Mr. Reilly, I-ah-"

#### Laying Down the Law to the Manager.

"You don't need to explain, Harris," interrupted Reilly. "There's only one situation involved here. I gave you an order and you made a bad job of it. It's up to the company to make it good; there's no room for argument there. When I brought the job in you took the order, but when I come back with a kick you don't seem to be a responsible enough person to handle it. Now, somebody is responsible, and I'll just leave

clear, the printing foreman went out the back door of his retreat and ascended the back stairs of the print shop, after which affairs resumed their normal course.

#### Ignition Lock Leads to a Discussion.

Reilly drove over to a cleaner and brighter downtown street and bought two shirts at a shirt sale—also some other things. Then he drove around to Ben Doyno's accessory and supply store and invested in a new ignition lock. Ben was coming in just as Reilly started out.

"Trying one of those new ignition locks," said Reilly, showing the bundle in his hand.

"I think you'll like it," replied Doync.
"Did you ever use an ignition lock?"

"No," said Reilly.

"Well, come here a minute," and Doyno led the way to a counter at the back of the store, "here's a little booklet I got out on the whole line of ignition locks we stock. It comes real handy now and then. It is—"

"Say" exclaimed Reilly, thumbing over the leaves, "who does your printing? Did vou ever try the Harrises?"

"Used to," was the supplyman's answer, "but I didn't get satisfaction. Granger did that job. Why?"

"Nothing, except that I've been having a job done by the Harrises and I'm having a hell of a time. They 'bulled' the job and don't seem to want to make it right. I've spent two days trying to find someone up there who can talk business, but every time I go there the man on the job very neatly passes the buck."

Doyno laughed. "That's an old trick of theirs. They did that on me a couple of times."

"Well, it gets my goat" asserted Reilly. "If there's one thing that makes me

in three men from a big automobile factory and eventually landed an order. It meant a lot to the company. Along with the order he turned in an expense bill If I fix a good one you take the credit.' of about \$600 for entertainment, and the fun started. He sent it to the sales manager and the sales manager sent it to the general manager; this man sent it somewhere else, and it kept floating around until finally the salesman wanted to know whether it was going to be paid. The sales manager then took it up in person with the general manager, and it wound up by their having a regular conference of everyone in authority before they passed the bill."

"Fine work!"

"Yes," continued Doyno, "and the first supply store I worked in after I left watched me do it, and if it wasn't all right why didn't you tell me before I had it done, so I could have changed it?

"I was ripping mad. I was a fiery young kid then and didn't give a darn if they did fire me. The manager and myself were getting into a fine quarrel when the boss stopped us, and I never heard any more about it after that. That sonofagun! If there was the least bit of responsibility he was forever passing it around, passing it around, and those to whom he passed it kept it going.

"When I opened up my store and got to a point where I needed a store manager and a few other things, I made it a rule that there never could be a question come up in my absence-outside of



"THE SALESMAN GAVE THE BILL TO THE SALES MANAGER, HE GAVE IT TO THE GENERAL MANAGER, AND SO IT WENT"

warm it's being chased from man to man in the effort of everybody to shift responsibility. Why can't they talk business like business men?"

"You've asked something, Reilly?"

"I presume I have, and I don't suppose there's any answer. But it's a poor plan, in my estimation. I've seen these buckpassers work ever since I was a kid and I never could see why it was necessarv."

#### Factory Where the "Buck" Grew Hot.

"You'll find it everywhere, Reilly," said Doyno. "It's nothing so unusual as to be startling."

"I suppose not."

"Why, Reilly, down in the Manorbard factory where I got my start in the ascessory trade, they used to keep the old buck red hot. Nobody ever wanted to assume any responsibility for anything. If a defective article came back the man who sent it waited several days before he could find where he got off, if the deal was of any consequence. Old Manorbard himself didn't want to monkey with little things like that, but he did want things run right, so nobody wanted to take a chance on doing something that wasn't going to suit.

"One day one of the salesmen brought

Manorbard's was much the same. The store had a manager, of course, and theoretically he was in charge of the place, but he had a strong antipathy to being the goat. He was forever leaving a loophole through which he could throw any blame back onto some clerk in the store; but if there was any commendation coming along he was right there to grab it. There was no loophole then.

"He tried to pass the buck to me one day and I refused to take it. Several times when I had fixed up stock displays he had told the big boss 'Yes, I thought I'd have Benny fix it up that way this time,' and the boss naturally gave him credit for being a nifty window trimmer. But, mind you, those were displays that the boss liked. One day, however, after the manager had watched me trim the window and hadn't said anything about it not being a good job, the boss came in late in the day and said he didn't like it.

#### Trying to Put Blame on the "Kid."

"The manager promptly passed the buck to me with the remark, 'That's one of Benny's ideas.' 'But you watched me do it,' I said. 'What do you mean?' snapped the manager. 'Just this,' I said. You knew all the time what sort of a display I was working out and you some very important ones-that couldn't be settled by the man on the job.

"One thing I won't have is a customer being shuffled from man to man because nobody wants to assume the responsibility of taking care of him. I would rather have an employe do a thing, in a way I wouldn't do it if I were doing it myself than to cause a customer to become disgruntled through being unable to find a responsible person in the

#### Doyno Declines to Be a Missionary.

"You better go up and talk to the Harrises, Ben; I think they would be glad if they saw you-when they waked up."

"No chance! No chance, Reilly!" and Doyno waved down the proposition with his hand.

"But what can a business be, Ben, where there doesn't seem to be any more responsible management than that? The internal methods must be a fine set of works."

"I can't understand it myself," replied Doyo. "If my business were like that I would be in a fine state of mind."

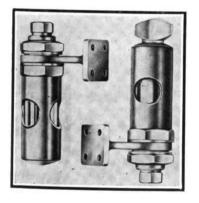
"State Asylum, you mean, don't you?" said Reilly, as he tucked the lock under his arm and made his second start for the door.

#### MOTOR WORLD

# CLOSE REGULATION IN NEW BOSCH LIGHTING SYSTEM

Voltage Maintained Constant Without Battery and Regardless of Speed—Lamps and Wiring Both Reveal Ingenuity.

Having quietly perfected its electric lighting system, though not without letting drop discreet hints of the development, the Bosch Magneto Co., of New York, at length has brought the apparatus to the point where it is ready for the market and, as might have been expected, the equipment is complete to the last detail and is fashioned and finished in a manner that always has been characteristic of Bosch products. The apparatus was first revealed for public in-



DASH AND TAIL LAMPS

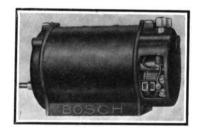
spection at the Motor Boat show, which was opened in Madison Square Garden on Saturday afternoon, 31st ult., where it will be on exhibition during the continuance of the show, or until next Saturday night.

Barring the infinite care with which every detail of the apparatus very evidently has been worked out, and the painstaking effort apparent in its finish, the most remarkable feature of the equipment is the exceptionally close regulation of the dynamo. By way of demonstrating the truth of the claims of the makers that speed variations between 350 revolutions a minute and anything above that rate have practically no effect upon the voltage generated, the apparatus is shown in operation under the stimulus of an electric motor and with an ordinary speedometer connected in a manner to indicate car speeds proportionate to the armature speed obtained with the demonstrating model.

With the dynamo operating at either

350 revolutions a minute or 3,500 revolutions a minute, any or all of the lamps can be switched on or off absolutely without flicker when operated directly by the dynamo and without the intervention of a battery; similarly, varying the armature speed with the lamps lighted has no appreciable effect upon the amount of light produced, regardless of whether the speed is varied quickly or slowly; nor is it possible to determine, by looking at the lamps, when the battery is cut in or out of the circuit, either by hand, with the aid of a switch provided for the purpose or by the automatic circuit breaker which disconnects the battery when the dynamo output becomes less than that of the battery.

Specifically, the dynamo is of the shunt-wound type and the excitation of the field magnets is governed—how closely may be gathered from the foregoing demonstration—by a specially designed and patented automatic controller of the electro-magnetic type which is



BOSCH LIGHTING GENERATOR

carried in the switchboard located on the dash of the car. This controller automatically reduces the strength of the field as the speed increases and increases the strength as the speed decreases, thus maintaining the voltage of the dynamo constant regardless of speed variations. Nominally, the voltage of the dynamo is 12 at 350 revolutions a minute, the maximum output, which cannot possibly be exceeded, being 7.5 amperes and 13.5 volts at 650 revolutions a minute. The current generation obviously is inherently regulated according to the load. Thus, a battery well discharged will receive the maximum current, though a battery fully charged will receive practically none. The dynamo provides, in fact, the much sought-after "taper charge" which is considered so essential by battery engineers.

Not the least important feature of the dynamo is that it is built to be interchangeable with the standard Bosch magneto. Which is to say that its base is built to conform to the standard magneto base; it can be substituted for a magneto, the shaft height being the

same as that of the magneto, or it can be driven in tandem. It can be held in place either with bolts or with a single steel strap which encircles it in the same manner that a magneto is held in place. All of the mechanism is completely enclosed, though the brushes are easily accessible for cleaning or inspection. Oil holes are provided, though the lubrication needs are as meager as those of a magneto.

In its own way the switchboard is quite as interesting as the dynamo, for it not only serves as a junction box but also contains the meters and the necessary switches for controlling the lamps and the current flowing to the battery. The meter is a double one, reading left and right for discharge and charge from a central zero and indicating either volts or amperes, according



LAMP • AND CONNECTOR

to the position of a switch provided to give either reading. Of the two other switches provided, one serves to connect the lamps in the various combinations ordinarily used, and the other connects either the dynamo direct to the lamps, the battery to the lamps, or both together, in which case the battery is charged. A removable key is provided to lock the switches in any position. The switches, by the way, are designed to be operated with the foot, which is as good as saying that they are exceptionally rugged. The regulating mechanism is enclosed within the switchboard casing and is virtually sealed. What little attention it may require is given with the aid of a key inserted through a closed hole at the side and used to alter slightly the output for unusual conditions such as continued low or high speed, for instance. Otherwise it need never be touched, and, it is stated, will operate indefinitely without attention.

In working out the various connections Bosch engineers have evolved what



is to all intents and purposes a "foolproof" system. In the first place, if for any reason it should be necessary to disconnect the dynamo and it should be connected wrongly, it automatically becomes inoperative, thus protecting the battery. In the second place, all wires are numbered and are so fastened that they cannot work loose. The wires themselves are encased in metallic coverings and the coverings themselves serve as the return circuit. Each wire, which consists of a number of fine strands, is inserted through a suitable bushing with the ends of the fine wires turned back against a solid brass head; a threaded sleeve over the whole serves to force the ends of the wires against protected contacts. Only the sleeve turns; hence the fine wires cannot be disturbed. All connections are made in this way.

The lamps that form part of the system are different from anything else of their kind, and, like all the other parts, are a product of the Bosch factories. One of their important features is that bulbs have been standardized and when inserted automatically are placed in proper focus; in fact, it is impossible to insert them in such a way that they are out of focus. In the case of the side lamps, the reflectors are attached to, and are a part of, the front glass retainers, construction which discourages unwelcome and unnecessary attention. The lamps have special hinges, located at the bottom, which are drilled to receive the bracket; a special screw, which cannot be removed though it may be loosened, is provided to fix the front of the lamp in position.

The construction of the head lamps is quite different and an ingenious means has been taken to discourage indiscriminate tinkering with the reflectors. The nut that holds the lamp onto the bracket is arranged to overlap the latch screw so that the lamp cannot be opened without first unscrewing the holding nut. The door fastening is a spring-loaded taperheaded bolt which consequently tends to hold the door tightly shut. Under the bezel of the lamp there is a tapered surface bedding upon a strip of heavy felt, thus providing a dust- and moisture-proof joint.

The reflectors, which in the side lamps are connected to the front glass holder, are in the head lamps connected to the lamp itself, the bulbs being held in place by means of bayonet locks which automatically provide for the proper focus. It is impossible to put any other than a Bosch bulb into a Bosch lamp. In designing the reflectors an effort—a suc-

cessful one, be it added—has been made to distribute the rays in such a way that the usual blinding glare is eliminated. Owing to the construction of the lamp filaments, which lie in a plane horizontal to that of the front glass, a true flame effect is produced, and instead of



SWITCHBOARD-REGULATOR

being projected in a thin pencil the light beams are more diffused and spread over a considerable angle.

Even the dash and tail lamps are of special design and carry special bulbs; in both cases, the lamp casing unscrews from its base to free the lamp bulb in case of necessity. The tail lamp has both red and white windows and the dash



SPARE LAMP CASE

lamp is provided with an integral switch. The battery that completes the equipment is nominally rated at 50 ampere hours capacity.

#### How Maxotire Protects Inner Tubes.

The idea of putting something into a tire between the casing and the tube, for the purpose of protecting the latter, is one that has invited the attention of many would-be inventors of tire-trouble preventers; but the task, for many reasons, is not as easy as it seems; heating, wear from friction, stiffness and other defects arise to offset the comparative immunity from punctures and blowouts.

The K & W Rubber Co., of Ashland, O.—which formerly was the K & W Mfg. Co.—has, however, evolved a device styled the Maxo tire which is designed to surround and protect the inner tube, and at the same time it is claimed that it will in no way injure it or interfere with the inherent good qualities of the tire as a whole.

Briefly, the Maxotire consists of what may be described as a continuous liner, built up of fabric and semi-cured rubber. It is placed between the tube and the casing. On one side it is formed like a straight side tire, and at the edge there is a hoop of tough steel wire which closely fits the rim. The other edge has no hoop, but is extended to overlap the hoop edge considerably, so that there is no break in the covering of the tube. The semi-cured rubber forms a soft. nonchafing bed for the tube and prevents pinching and chafing. In case of a bad cut, the edges of the Maxotire cannot pull up because of the wire hoop on each side and because of the flap on the other side.

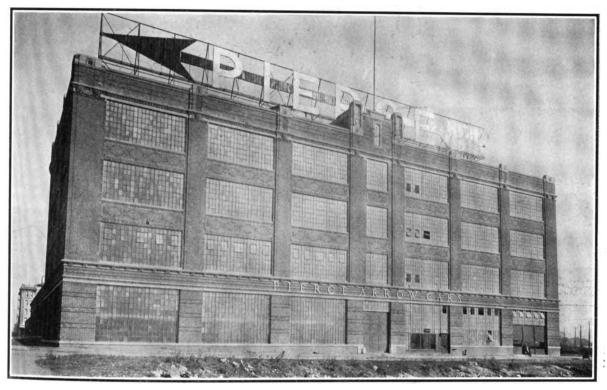
As for the effect of the appliance, it is likened by the makers to a second casing put on in addition to the ordinary casing, for it is said to be capable of holding the tube and keeping the tire as a whole intact despite rim cuts, holes in the casing and other things that would allow the tube to go to pieces under ordinary conditions.

#### Straightening Bent Valve Stems.

As a rule, a valve that has a bent stem should be replaced, for it is difficult to make a really good job of straightening it. If, however, the valve must be used again, or if the bend is below the guide. fairly satisfactory results can be obtained by laying the stem on a solid, flat surface, such as the face of an anvil that is not banged out of true, and tapping it with a soft hammer, or, if a hard hammer must be used, interposing a piece of brass or copper between the hammer and the work. By turning the stem with the "hump" upward and working carefully, the stem can be made good enough for temporary use. The main trouble is that as it is impossible to make a really perfect job in this way, the bore of the guide is apt to be worn out of true if the valve is used for long, and there also is likely to be a side thrust which will further increase wear.

## SERVICE IDEALS THAT ARE IDEALLY APPLIED

How Pierce-Arrow Owners and Dealers Are Cared for in a Four-Story Building Equipped to Build Cars, if Necessary—Repair Work That Includes Even Magneto Overhauling and Wheel Building.



HARROLDS-PIERCE-ARROW FOUR-STORY SERVICE STATION IN LONG ISLAND CITY

Probably there are not many persons who know just what the word "service" means as it is applied to the science of motor car maintenance—or what it should mean. But no confusion over the definition of the term exists in the minds of those who are responsible for the Pierce-Arrow Motor Car Co., of Buffalo, N. Y.

Service, according to the Pierce-Arrow standard, means 24-hour service. Caring for the host of Pierce-Arrow owners and dealers throughout the country has become a veritable hobby with the Pierce-Arrow company that fast is reaching a state of perfection—if it has not already reached that state—that is nothing short of astonishing.

Just across the East River from the teeming metropolis of New York, where the Harrolds Motor Car Co. distributes Pierce-Arrow cars and cares for the wants of their owners from its building in 54th street, just west of Broadway,

a great Harrolds Pierce-Arrow service building has within the past year reared itself to take its place in Long Island City's "automobile colory." It is a big, solid structure and it is superbly



ELEVATOR ENTRANCE

equipped. It stands as a monument that typifies the Pierce-Arrow idea of what service to the owner and to the dealer should mean.

The building and the equipment and the men who run the machines make possible "24-hour service." John Doe's chauffeur jammed on his brakes to avoid collision with a heavy brewery truck; his car skidded, crumpled a mudguard, wrenched the steering gear and bent a steering knuckle. Within an hour the car was towed by a Pierce-Arrow service car to the Pierce-Arrow service station and within 24 hours it was on the road again as good as new, or better.

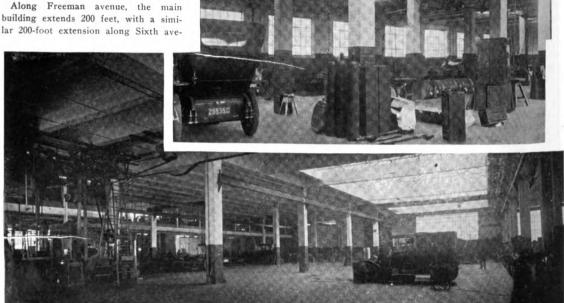
Barring the equipment and the organization back of the equipment, one reason the station is enabled to give quick service is that it is strategically located. It is but 15 minutes, via the great Queensboro Bridge, from New York and from the Pierce-Arrow company's New York home office, which is the Harrolds Mo-

tor Car Co. The building stands a few blocks east of the Queensboro Bridge Plaza and occupies a plot of ground fronting on Freeman avenue, where it joins Jackson avenue, which is the main artery of travel along the shore of the island. Even in its external appearance. from the flashing "arrowed" Pierce sign on the roof, down past rows and rows of great windows, the building is distinctive. It is built up of steel and concrete and there is not a bit of wood or other inflammable trim in it. The facing is buff brick.

Along Freeman avenue, the main building extends 200 feet, with a simi-

building, measuring 200 x 100 feet, has been built up to this height. All told, some 100,000 square feet of floor space is provided and it is significant that this is

out becomes apparent and where the completeness of the equipment makes it possible to grasp the meaning of the word service as it is interpreted by





HARROLDS WOOD WORKING DEPARTM ENT WHERE EVEN WHEELS ARE BUILT

nue; on the Fifth avenue side there is a one-story extension measuring 50 x 100 feet. The foundations of the building were put down to support four stories. though up to now only part of the main

considerably more than was provided by the original Pierce-Arrow factory building in Buffalo.

It is inside the building, however, where the genius of those who laid it

UPPER: THE AMPLE TINSHOP. LOWER: MAIN FLOOR SHOWING STOCK ROOM

Pierce-Arrow officials. Probably the one thing that first impresses visitors is the exceptional cleanliness; floors, shelves, benches, windows, all are kept scrupulously clean. Superintendent Neal Jewett ascribes the absence of dirt to the activities of "four 'wops'" who do nothing but clean from morn till night.

The office is located on the first floor and even here there are abundant evidences of efficiency engineering. Instead of ordinary intercommunicating telephones, for instance, there are loudspeaking 'phones which shout their message right out and leave both the listener's hands free to go on with his work; there are no female employes. As an adjunct to the telephone system, and a mighty important one, there is a bell system with the aid of which any person can be called from any part of the building. Each department head is allotted a code number. If he cannot be found readily by means of the intercommunicating telephone system, the bells all over the building are set to ringing his code signal, automatically, until he answers. This is just one instance of how time is saved.

Outside, the big main floor is divided centrally by a double work bench facing either way. One side is used for pleasure cars and the other for commercial vehicles. There is a truly immense elevator, by the way, that will raise a fully loaded five-ton truck as easily as the passenger elevator in another corner raises and lowers its operator. The ceiling of this lower floor is 20 feet in height, for which there is a very good reason. A lower ceiling would not permit the removal of heavy furniture van bodies from truck chassis. Over both sides of the floor there are traveling cranes to facilitate body removal. Vehicles that are undergoing repairs are ranged along the side walls and comparatively close to the benches, thus leaving two broad central aisles and making possible the removal of any individual car without the necessity for disturbing any other.

#### Only Trained Men Employed.

The machine shop occupies one corner -a big one-of the main floor and probably is the most complete shop of its size there is, a condition made necessary by the steadily growing importance of the business of completely rebuilding Pierce-Arrow cars. By way of making plain the extent of the equipment, it is only necessary to point out that there are facilities not only for overhauling magnetos but for remagnetizing the magnets, if necessary. Carrying out the efficiency idea, the shop is divided into departments, one of which is devoted entirely to motor work and another to rear axle and transmission work, and the light that shines over the benches comes from the sun itself. The two side walls that close in the shop are little more than glass, the window sashes being well-nigh invisible.

The benches over which the workmen bend are exceptionally roomy and, be it added, the workmen themselves are not mere mechanics; all of them have been trained "in the factory behind the car." As matter of interesting fact, there is what amounts to an unusually thorough school at the Pierce-Arrow factory. Here those men who show an aptitude for mechanical matters and who give evidence of sobriety and other necessary virtues, are put through a carefully prepared course which takes them successively through the whole plant, to be turned out at the end of four years

thoroughly familiar with Pierce-Arrow construction and Pierce-Arrow ideals. They are then ready to be placed in charge of branch service stations, and there can be no doubt of their ability successfully to discharge their duties. It is under such a man that the Long Island City service station is run.

#### Unusual Extent of Equipment

But to get back to the machine shop: Wherever it is possible to use power instead of human muscle, machinery is given the preference. So, as a matter of course, compressed air is used quite extensively. There is an immense compressor down in the basement which takes up its work automatically and fills great tanks to 100 pounds pressure before it becomes silent. From the tanks, the air is led all over the building, the main pipes being at the back of the work benches, where connection with flexible "work tubes" is facilitated. Of course, the machine-shop tools are operated by electricity, two motors hung from the ceiling furnishing the power. The arrangement of the motors is such that either can be used to drive the whole equipment, or only one-fourth of it, or both may be used at once to help over a "peak load" when all the machines are running. Some idea of the completeness of the equipment may be gained by the tools in the shop, the list including no fewer than 10 lathes, two cylinder grinders and a crankshaft grinder, one screw machine, three drills, four emery grinders, one tool grinder, two milling machines, a planer, a saw and a heavy punch. Just outside the shop door there is an immense 150-ton press for replacing commercial vehicle tires.

The shop, obviously, is a big one, and it needs to be a big one in order to render the quick service that is so essential. The capacity of the building is about 500 cars, of which as many as 150 may be in the shops for repair or overhaul at the same time. Ordinarily about three weeks is required to overhaul a car; which means that it will be completely torn down-even to the last bolt or screw or nut in the chassis-worn parts replaced with new ones where necessary and built up again in the same manner that a new car is built at the factory. In fact, the equipment of the building is quite complete enough to build a car from the ground up.

All of which requires that no small amount of parts be kept in stock, and here again the thoroughness of Pierce-Arrow practice makes itself apparent. The stock room is located next to the machine-shop, where it is handy to the

workmen. However, the men are not permitted to take anything from stock without the foreman's order. The order is delivered to a central desk, where it properly entered and afterward whisked over to the stock room through a pneumatic tube system that reaches all over the building. From the stock room the parts are delivered direct to the workmen by boys employed for the purpose. Each separate part is kept in a steel drawer, of which there are tiers and tiers stretching nearly half the length of the building. All the parts are numbered and listed in an index which shows the number of the drawer in which it is kept and the location of the drawer

A swift and silent passenger elevator connects the four floors and up on the highest, clear of dust and dirt, there is the painting department, completely isolated from every other department. The whole of the third floor is given over to dead storage space—clean and light and airy, with never a suspicion of dampness to mar highly finished surfaces.

#### Where Even Wheels Are Built.

Just as all the machine work is confined to the main floor, so is all wood working confined to the second floor. The whole east end of the floor is devoted to the body builders, where the equipment is complete enough to allow of the building of special bodies on occasion, though most of the work is confined to slight remodeling and repairing. Incidentally, though it hardly would be expected, there is a complete wheelwright's plant where wheel repairing and building can be carried on with the minimum of hand labor. At the other end of the second floor there is an upholstery department that is just as complete in its way as are any of the others.

Completely isolated from the rest of the building by means of thick walls, the tinshop where fenders and radiators and lamps are repaired is located in the extension, the isolation being necessary because of the use of open flame in many of the operations. Here it is possible to take every last wrinkle out of the worst crumpled mudguard that ever survived an accident; radiators, too, are put in the pink of condition, as are lamps, and there is a forge, with an electrically operated blower for operations requiring its by no means gentle heat.

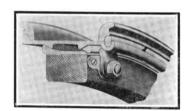
It is in this big extension, which is practically roofed with glass, an immense skylight covering all but a part of it, that the battery room is located, though this room in turn is isolated from

4

#### the tinshop by thick walls and a fireproof door. Here there is a switchboard, for regulating the current that charges the batteries, and all the rest of the necessary paraphernalia for per-

Additions Are Made in Both Detachable and Detachable - Demountable Types — Two-Piece Construction.

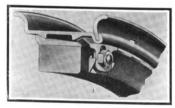
Although according to popular notion there is little or no room for development in rim design, the Goodyear Tire & Rubber Co., of Akron, Ohio., has proved that, as often is the case, popular notion is wrong by supplementing its already well-tried '08 detachable rim with two brand new No-rim-cut rims,



GOODYEAR "IDEAL" DEMOUNTABLE

and one that is partly new, styled the Ideal. The latter designation covers the '07 rim as well as a detachable-demountable rim embodying the same principles, and the No-rim-cut is made in both detachable and detachable-demountable forms.

The No-Rim-Cut detachable rim is a light, two-piece rim that weighs, the makers state, about 10 pounds per wheel less than the ordinary type of detachable rim. The outside flange, which is split, sets into an annular groove in the



"NO-RIM-CUT" DEMOUNTABLE

edge of the rim, the angle of the groove being so calculated that the flange is pushed firmly home by the pressure of the tire. The flange acts both in its capacity as a flange and also as a locking ring. The construction is precisely the same as that of the No-Rim-Cut detachable demountable rim shown in one of the accompanying illustrations, so far as the flange-ring and its groove are concerned.

The Ideal detachable rim, as the other

is styled, is identical with the Goodyear '07 rim, having both a removable flange and a locking ring, the latter split, of course, and bedded in a groove into which it is pressed by the lateral push of the flange, which in turn is forced outward by the tire. The illustration of the Ideal detachable demountable rim shows the locking feature of this rim also.

The No-Rim-Cut and the Ideal detachable demountable rims are so clearly shown that nothing is left to the imagination, and there is little room for description. The No-Rim-Cut demountable is provided with lugs that are integral with the wedges that press the rim into place and hold it firmly. The lugs are slotted so that when the nuts are slackened they will drop back sufficiently far to permit the removal of the rim, but will not need to be removed and will not reverse their position, small "ears" holding them up.

In the case of the Ideal demountable rim, there is a separate locking ring of wedge-shaped cross section, held up to its place by plain steel lugs with a single nut to each lug. All the Goodyear demountable rims fit standard Firestone and Kelsey felloe bands and will take all standard types of tires except, of course, clincher tires.

#### Dealer-Banker is Under Indictment.

Raymond E. Smith, secretary and treasurer of the Roseville Trust Co., of Newark, N. J., and part owner in the Oakland Motor Sales Co. and the L C. Smith Supply Store in East Orange, N. J., was indicted last week for wrecking the trust company; after he fled the sheriff took possession of the automobile businesses. Casper J. Maier, who was with Smith in the automobile concerns, was charged with overdrawing an account. Both peaded not guilty, as did 13 of the 19 men indicted along with Smith.

Demands Money for Noise Producers.

Claiming an unpaid bill of \$886.20 for Klaxon horns, the Lovell-McConnell Mfg. Co., of Newark, N. J., brought suit this week in the Supreme Court for New York county against T. A. and Floyd A. Sears, trading in Rome, N. Y., as the Sears Auto & Supply Co. The shipments were made between December 4 and 27.

Vulcanizer's Notes Bring a Judgment.
The Goodyear Tire & Rubber Co. filed judgment this week in the New York county clerk's office against Arthur F. Rollins, who manufactures steam vulcanizers in Brooklyn under the style Keystone Co. The suit was based on a series of \$50 notes aggregating \$700.

#### Metropolitan Dealers Plan Banquet.

forming all the operations incident to

whole service station is the receiving

and shipping department, which is lo-

cated in a mezzanine gallery that looks

out on the main floor. Incoming express

and freight matter is taken from the

freight elevator directly into the receiv-

ing rooms, where it is checked and tick-

eted and placed in stock, if it is stock,

or held for orders, or sent down to the

repair department or wherever it may

One section of the mezzanine floor

is given over to a more than ordinarily

roomy locker room for the 200-odd em-

ployes, where each employe is provided

with an individual steel locker. Inci-

dentally, the men are required to change

their clothing in the locker room before

they "punch the clock." Wash basins are

provided as a matter of course-rows

and rows of them-and everywhere

everything is scrupulously clean and

sweet-smelling. Without exaggeration,

the shop, on the whole, is one of the

few where a normal person can wander

around and leave at the end of half a day

with his clothing unspotted and has

hands quite clean.

Not the least important part of the

proper battery overhaul.

be destined.

A dinner will be a feature of the annual meeting of the Automobile Dealers' Association, of New York City, which is to be held Wednesday, 18th inst. At that time the roster of officers for the new year will be named, a successor being chosen to Arthur M. Day, the president, who recently severed his connection with the A. Elliott Ranney Co., Hudson distributer in New York City. The annual meeting of the New York State association will be held probably in March, and a successor will be chosen to Day, he being also the head of that organization, which was formed but a few months ago.

#### Foreign Engineer to Visit America.

D. McCall White, an English engineer of prominence who has been associated with the Daimler and Napier, and later the Crossley factories, is due to arrive in this country this week. He will make his headquarters at the office of the Society of Automobile Engineers in New York, and it is not improbable that he will permanently locate in this country.

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#### MOTOR WORLD

### STEINMETZ SEES ELECTRIC AS THE UNIVERSAL CAR

Noted Engineer Predicts "Gas" Cars Will Vanish When Sporting Flavor Disappears—Why the Electric Must Prevail.

That "the future of automobiling belongs to the electric" is the expressed opinion of Dr. Charles Proteus Steinmetz, and though there are few who would hesitate to challenge such a statement from a person of lesser imminence in the electrical world than is Dr. Steinmetz, the statement, coming whence it does, cannot fail to command respect and deep pondering.

Dr. Steinmetz is an electrical engineer of international reputation who is universally credited with knowing whereof he speaks. Hence, when he makes such a statement, which he did before the last meeting of the Electric Vehicle Association of America, held in New York City on the 28th ult., it can be taken for granted that he has, metaphorically speaking, "looked before he leaped," and that it is the result of calm reflection and careful reasoning.

#### Need of Charging Stations.

In prophesying the future of the electric, Dr. Steinmetz, who, in addition to being professor of electrical engineering at Union University, past president of the American Institute of Electrical Engineers and the author of more than an armful of standard works, is chief construction engineer for the General Electric Co., of Schenectady, N. Y., prophesies that as soon as the automobile ceases to be linked with sport, primarily, and, secondarily, as soon as cooperation between central stations and illuminating companies becomes a fact, the electric will become the ideal conveyance.

"The future of automobiling belongs to the electric, and for the following reason," stated Dr. Steinmetz. "Today, automobiling is still essentially a sport and for this purpose to most persons the gasolene car appears to have an advantage in being capable of higher engine power and therefore high speed, and to go longer distances across the country without requiring charging stations, since gasolene can be bought almost anywhere.

"You have all heard from Col. Bailey's talk [referring to a paper read by Col-Bailey describing his recent trip in a Bailey electric from New York to Chicago] that the electric automobile is

equally capable of long distance touring and that even today you can make shift by getting charges, and it is only a question of organizing a system of charging stations all over the country to make the electric touring car equally capable of going over long distances and therefore more suitable for this purpose.

#### Automobiles Following Bicycles.

"Eighteen years ago we all thought the bicycle had come to stay as an everyday utility, as a business conveyance; still it is banished for this purpose; we don't go to work on the bicycle any more, but use another conveyance. But, nevertheless, the bicycle is today used just as much as it ever was used, but now it has become a business conveyance. It is used to cover distance most conveniently. It is my opinion that very much of the present use of the automobile by the lawyer to go to his office, or by the engineer to go to the factory and back, is of the same class as the use of the bicycle 18 years ago. It is the thing to do-everybody who can afford it gets an automobile and runs an automobile.

"Now, we see already that the automobile is beginning to recede from the sporting class. We see, already, many persons who can afford it taking no pleasure in driving their own cars but having chauffeurs to drive them. But the majority of people cannot afford a chauffeur, so they must either abandon the use of the automobile altogether or drive it themselves.

#### Touring Automobile Will Vanish.

"I believe that though the gasolene engine is very simple and very well developed and will be made more simple in the future, it is not an engine that the average business man or lawyer, or professional man who is not an engineer can handle or take care of and take pleasure in taking care of, where the owner is not interested in it as a sporting matter. Naturally, when one is interested in an automobile as a means of diversion and sport he can do anything, but the human race as a whole does not keep up such an interest for a long time.

"What I want to draw your attention to is the beginning of the change of the automobile from a sporting proposition to a business proposition; from a sporting-pleasure vehicle to a business vehicle; not the pleasure of going itself, but the going for business; the going to some place with a definite object—that condition has already come.

"The only car which will remain in

general use is the car which everybody can take care of because it does not require any care; that means electric and the future of the automobile as a business vehicle-as a carriage-is the electric, because it does not require any special knowledge or any care-anybody, any lady, can run it. The electric automobile may be, and is, capable of doing all that the gasolene car can do, but I believe that, just as 18 years ago we have seen, on a pleasant Sunday or holiday thousands and thousands of bicycles going all over the country, from New York and Boston to Albany touring, all have vanished, likewise we will see automobiles very largely vanish from touring. The automobile is all very well, but when you wish to go for hundreds of miles the Pullman car is really more comfortable.

"It is all right when you want to enjoy Nature. People will always go out across the country on bicycles, in automobiles, on motorcycles, in horse carriages and so on, but they form a very small minority. The long distance touring car is a temporary advantage, but in the final development when the automobile has come to be an everyday affair—a business proposition and not a sporting idea—it will be a matter of secondary importance.

#### Electric Requires No Attention.

"That means, with the automobile vehicle or automobile carriage development, an electric carriage for every-day use; it means we do not need mileage of 100 miles or so. The everyday use of the average man going around town to business or elsewhere is from 10 to 20 miles a day, and a radius of 10 to 20, or possibly 30 miles will cover any business proposition probably 95 per cent. or more. You see what that means—you can get a very small, light battery and a light carriage.

"There are many expensive gasolene cars used today and there will be more in the future, but still, with the majority, the simple carriage is what is needed. True, we have the horse and buggy, but the average man cannot afford a horse and buggy because it requires care and attention to keep a horse and you cannot keep it in a city without great expense. But the average man can afford an electric carriage, because it requires no attention and there is the main future for the electric carriage-it makes the owner independent of trolley cars, independent of railroad cars, and allows him to go anywhere and everywhere: and that will be, in my opinion, the main feature of the automobile in the future

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when the condition has become stationary, when the first enthusiasm for automobiling as the greatest of all sports will have somewhat dwindled away. It will not mean a reduction of their use, but rather an increase. If you look into it, probably you will find that more bicycles are used today than in the past, but they are not conspicuous because they are no longer used for sport, except occasionally.

#### Low Electric Garaging Charges.

"When you consider, if we had an electric carriage in everyday use, it would be quite feasible to arrange for charging it at a moderate monthly cost of, say, \$10 or \$5 a month. The illuminating company or the local company in a city or country town anywhere takes care of the electric car. You run it there in the evening and in the morning you go there and take it out, the battery having been charged during the night. A light charge is ample for all the use you will have for it during the day.

"Indeed, you may, in many cases, go further. You may arrange that a nominal additional charge be made by the illuminating company to include sending the automobile to your house and leaving it in front of your door and in the evening when you arrive home sending for it. This would not cost much extra; you can get a messenger for, say, 20 cents a trip, and even with this it probably would cost less than \$10 a month because it isn't used every day; it is such a small charge it is not of moment.

#### Cooperation of Electric Companies.

"'Oh,' you might say, 'what if somebody wants to use a car very much more? You would need more mileage.' Well, you could arrange to have a boost charge put in your carriage from any illuminating company in the country by showing your card. It would not be difficult if both sides-the electric automobile industry and the electric operating company - cooperate; have an interchange of courtesies by an annual payment or monthly payment of a certain amount, whereby the automobile is entitled to be charged everywhere and anywhere-merely run it into any illuminating company's garage, show your card, get a boost and go away again.

"That would make the electric the simplest thing in the world. It would make it the ideal carriage which anybody, any lady, can have, because there is no trouble connected with it; anybody can run it, any lady or child—you just telephone to the illuminating company gar-

age and have somebody bring it to you and when you are through with it you have somebody take it back and you

have somebody take it back and you have your monthly charge for service, and that is all there is to it."

#### Shaler's Latest Vulcanizer Development.

While there is nothing new in the making of a vulcanizer that is heated by the burning of a measured quantity of gasolene or alcohol in the device itself, there is novelty in the vulcanizer that



SHALER "SAFETY VUL-KIT"

just has been offered by the well-known C. A Shaler Co., of Waupun, Wis., in that the fuel burns without outside flame and without smoke, eliminating danger to the user and to the garage, if used indoors. The little vulcanizer, which is styled the "Safety Vul-Kit," may be clamped to the tire while it is in place on the wheel and can also be used conveniently for tube work. The fuel receptacle, which may be filled with



APPLIED TO TUBE

either alcohol or gasolene, holds just enough to give the right amount of heat, so that over-curing is automatically prevented. As is well known, the Shaler company is an old one in the vulcanizer field, and the Vul-Kit is the youngest of a large and varied family of tire-mending appliances.

#### Car Trade Not Large in Canal Country.

Dreams of a thriving automobile trade in Panama and the Canal Zone are not encouraged by the report of Consul General Alban G. Snyder, of Panama City, who states in a recent report to the Federal government that conditions are not propitious for the immediate expansion of the automobile business in that part of the world

One reason is that there are not more than 30 miles of good roads and what paved streets Panama City possesses are very narrow, no road improvements

of any consequence are contemplated, and gasolene is 40 cents a gallon.

The population of the entire Republic of Panama is 425,000, the Canal Zone, including Panama and Colon, 90,000, and Panama City, 30,000. There are about 120 licensed cars in Panama, of which 50 are in garage and livery use. About a dozen a year are imported. The most popular type of car is a 5-passenger, 4 cylinder, 20- to 40-horsepower vehicle, ranging in price from \$750 to \$1,500.

#### Oklahoma City Dealers in Association.

The automobile dealers in Oklahoma City have formed the Oklahoma City Automobile Dealers' Association, the immediate object of which is to hold an automobile show; it will be that city's first show and it is stated that 20 dealers already have contracted for space.

The officers who were chosen are: President, F. R. Thompson; vice-president, E. R. Carhart; secretary, R. B. Fremont; treasurer, W. H. Vesper; chairman of the advertising publicity committee, Frank Hoops; chairman of the bylaws and organization committee, M. F. Burwell; chairman of the finance committee, W. H. Vesper; chairman of the committee on entertainment, E. A. Davis; chairman of the committee on decorations, C. F. Westcott. The secretary is district manager for the Krit Motor Car Co. and is located at 24-26 West 5th street.

#### American Motors for Italian Cars.

Evidence of the great change wrought by the whirliging of time is contained in the announcement that the F.A.S.T. cars, which are built in Turin, Italy, are to be equipped with American motors, specifically Continentals. The car is built by the Fabbrica Automobil Storero Torino and is made in both fours and sixes, both of which will utilize Continental motors, which were selected as the result of tests which extended over a considerable period. The first consignment of 25 motors was shipped during the latter part of last week.

#### Sheriff Seized Cars Rader Bought.

Wilber C. Rader, a former National racing driver, has brought suit in the District Court in St. Paul against former City Detective Fred Turner and Shereiff Wagener for three automobiles, or \$3,700, and \$4,500 damages. Rader claims he bought the cars in September from James Archer, who was Turner's partner in an automobile business, and that Turner seized them as Archer's property October 18, claiming a partner-ship right in them.

### ARRESTED LAWYER TELLS COURT LAW IS ALL WRONG

And the Judge Lets Him Go-Brooklyn Man Says New York Has no Valid Law Against Glaring of Headlights.

After many motorists had been arrested in Greater New York for having dazzling headlights on their automobiles and the police saw no reason why they should not continue to make arrests, George E. Brower, a Brooklyn attorney, convinced City Magistrate Leach, of the Jamaica court, that the ordinance was not worth the ink it took to write it; the judge let Brower go, even though it was admitted his headlights were bright, and now scores of other car owners are wondering if they were not "easy" when they submitted to paying fines.

Whether the justice was dismayed by Brower's argument or whether the attorney's case really will stand the test of higher courts may be ascertained later; but Brower got himself out of the toils, which was all he desired. His line of contention was that New York City and New York State have enacted so many laws about automobiles that the authorities themselves don't seem to know just where they stand.

He was charged with violating an ordinance of 1909 which prohibited blinding headlights; he brought out, however, that another ordinance was passed in 1913, going into effect October 8, and that it substantially reenacted the 1909 ordinance, and he cited authorities to the effect that "where a subsequent statute making a different provision on the same subject is obviously intended to cover the entire field, it works an implied repeal of existing statutes upon that subject."

No less than six different authorities were cited, wherefore he claimed the 1909 ordinance was repealed with the passage of the 1913 ordinance. Since the old ordinance was "dead," he claimed, he could not be arrested under it.

The 1913 ordinance is one relating to lights; it makes the usual provision regarding shading strong lamps and further includes a clause the interpretation of which makes sidelights practically necessary. But as to being arrested under this ordinance, Brower claimed that, too, was inoperative.

He claimed that the Callan law, a State statute of August 1, 1910, superseded the

the city ordinance and did not refer to blinding headlights. The Callan law, he pointed out, says: "Except as herein otherwise provided, this article shall be exclusively controlling. . . . 3. On the accessories used upon motor vehicles and their incidents and the speed of motor vehicles upon the public high-

ways." He maintained that this covers

headlights.

The Callan law also incorporates a section prohibiting cities from passing any laws inconsistent with the Callan measure but provides that cities of the first class—which means New York—may legislate with regard to the "operation" of cars. "Operation," Brower contended, has nothing to do with headlights, according to the Standard Dictionary. He furthermore declared that any ordinance, to be legal, had to be

filed with the Secretary of State and that

this had not been done with either the

1909 or 1913 statutes.

Summed up, his case was: I cannot be held under the 1909 law because it was repealed by the 1913 ordinance and, anyway, never was filed with the Secretary of State. I could not be held under the 1913 ordinance because the Callan law supercedes it and, anyway, the ordinance never was filed with the Secretary of State. I cannot be held under the Callan law because it doesn't say anything about screening headlights. Everybody might not "get away with it" in every court, but it sounds very much as though Brower had given the legislators and other authorities something to think about.

#### Garagemen Rest on Sunday.

Making Sunday a day of rest for the dealer and the garageman and still providing accommodations for the car owner is a problem which has been solved by the tradesmen in Sheboygan, Wis. Heretofore all of them have kept open seven days a week and have thereby added to the monotony of their respective businesses.

The plan called for the formation of a garagemen's and dealers' association and an agreement whereby seven of the eight garages in town will close every Sunday; the seven which are closed will display a card in a front window informing the prospective customer which garage is open that day. The members of the association will take a turn at keeping open every eighth Sunday.

The officers of the association are: President, Charles F. Kade, Jr., president of the Sheboygan Auto & Supply Co.; vice-president, L. P. Evans; secretary and treasurer, N. P. Hansen.

#### PROPOSE CLEARING HOUSE TO PREVENT CAR STEALING

Good Financial Investment, Says Buick Sales Manager, But It Must Be Run in Business Way—Advises Dealers.

Instead of being, as so many garagemen have asserted, a losing venture, the garage business is one of the best opportunities in the business world, according to Sales Manager R. H. Collins of the Buick Motor Co. But when he links "garage" with the word "business" he has given what he says is the key to the whole situation, which is that that garage of unbusinesslike methods might better never have opened its doors.

"There is no line of business in any community," Collins said, "that offers greater possibilities than the automobile and garage business carried on in an attractive and well-appointed salesroom or garage. It is a business of which the owner has every reason to feel justly proud.

"While there is money in operating a garage and selling automobiles, you can't expect to gather it in a dirty garage and salesroom, with greasy help that can't draw a can of gasolene without lighting a fresh cigarette, because people who can afford an automobile will not mix with that sort of company if they can avoid it.

"When a garage owner has established a reputation for washing the mud off a car with clear water, instead of eating the varnish off with strong soft soap, he will get all the business he can care for.

"Handsome, new automobiles with their fine appointments and piano finish and dirty, dark garages don't mix any better than gasolene and water, and while in both cases they can be mixed in a limited way you can't make money by doing it. For various reasons patrons want the oil they pay for in the crank and transmission cases of their cars and not on the cushions.

"There is nothing wrong with the automobile business. The trouble is there are too many wrong people in it, and as fast as incompetent proprietors with the wrong kind of help are forced out the sooner their places will be filled with earnest, energetic men who can make money, and the car owner commences to have peace of mind and an occasional screwdriver and pair of pliers in his car when he needs them."

#### Accelerator for Many Fuels.

Of the many devices that are available for the purpose of effecting economy in the consumption of gasolene and improving the working of the motor, there is none that is quite like the "accelerator" manufactured by C. R. Baum, of 1908 Wyandotte street, Kansas City, Mo., which not only differs from others in its constructional details but also in its capacity for handling various fuels. It can be charged, according to the maker, with gasolene, kerosene, fresh water, salt water, cracked moth-balls in water and kerosene, picric acid and turpentine, special decarbonizing fluids or just plain air.

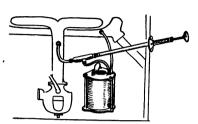
The device consists of a liquid container carried in the engine space, in which is a coil of pipe through which a small portion of the exhaust gases passes, heating whatever the receptacle contains. A pipe leading to the intake manifold conducts the vapor resulting from the heating of the liquid to the motor, there being a spring valve in the pipe line controlled by a plunger on the dash; the plunger may be operated either by hand or foot, as is most convenient. The idea is to provide a rich, hot vapor to mix with the regular fuel supply, the quantity being regulated by the valve which, incidentally, has a series of notches to hold it open at any desired point so that the motor may be allowed to run with the mixture that is found hest for it under existing conditions.

#### Cut-out That Makes Motor Bark.

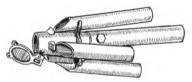
A muffler cut-out that not only opens a free passage for the exhaust gases but forces them to pass out that way and wholly cuts out the muffler is the product of the Auto Improvements Co., of Bristol, R. I., and is styled the "XL" cutout. The accompanying illustration depicts the device, the valve being shown open for a free exhaust.

There is an opening in the bottom of the cut-out that is covered by a flap or tongue when the exhaust is to go to the muffler. When a free exhaust is desired the tongue is raised by pulling on the cable attached to the lever and it forms a partition which shuts off the muffler entirely and shoots the exhaust straight out through the large opening. The

elimination of the muffler results in a much sharper, louder exhaust than when the muffler takes part of the gas. Either



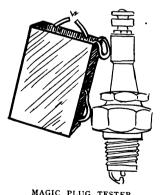
BAUM'S MOTOR ACCELERATOR



"XL" MUFFLER CUT-OUT



SPARTAN ALL STEEL HAMMER



MAGIC PLUG TESTER

foot or hand control may be fitted. The cut-out shown is for Ford cars, and at the present time this is the only type made. Others will be made shortly. The price of the Ford cut-out is \$3.

#### Hammer that Serves Several Purposes.

About the only drawback there is to a wood hammer-handle is that it is more or less vulnerable to abuse and will in time give way to the effects of being banged against things that the head ought to hit, and will not always stand the strain when used as a lever. Even these objections do not obtain in the case of the "Spartan" hammer that has been designed especially for automobile work by the Drop Forging Co., of West Side avenue and Fisk street, Jersey City, N. J.

As the accompanying illustration shows clearly, the tool is made throughout of a single piece; the material is tool steel and the hammer is forged and well tempered for real work. The end of the handle is a big, husky screwdriver. Finally, the device can be used as a tire lever, its good material giving it the strength to stand up under the punishment. The price is \$1.

#### Convenient Spark Plug Tester.

The ancient and more or less honorable method of using a screwdriver to test spark plugs by short-circuiting the plugs has, in reality, only one advantage -that it is easily done. It is not an accurate test, it may damage the coil, and also it often jolts the user.

Such things may be avoided, however, by use of a spark plug tester that has just has been offered by the General Automobile Supply Co., of 212 East Fifth street, Cincinnati, O., and is styled the Magic plug tester. The accompanying illustration shows clearly not only the form and proportions of the device. but also how it is used. The body is, of course, of an insulating material; through it run conductors leading to the two spark points at the top, the other ends of the conductors terminating in contacts that are so spaced as to be easily placed on the shell and the center electrode of a plug. When this is done, the current is diverted from the plug points to the tester, the spark occurring between the tester points instead of at the plug points. The tester is small enough to go easily into the vest pocket, and its price is 50 cents.

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#### MOTOR WORLD

### CARS AND TRUCKS STAGED IN TROY'S FOURTH SHOW

Thirty-six Makes of Pleasure Cars and Seven of Commercials Displayed by 25 Dealers—Exhibitors and Their Wares.

Revealing close to two score separate exhibits, Mayor Burns on Monday night fingered the switch that flooded the State Armory with light and gave life to the fourth annual show of the Troy (N. Y.) Automobile Dealers' Association, which is to keep open house in that historic Hudson River town until Saturday night, 7th inst. Twenty-five car dealers exhibit their wares on the main floor and in the basement, the roster of names including 36 different brands of pleasure cars and seven makes of trucks; most of the accessories are placed in the basement, 13 dealers occupying space.

The decorative scheme that has been adopted is somewhat unusual. Instead of mere strips and streamers of colored bunting, there is a fairy-like pergola which serves as a central aisle, and over which there is a profusion of southern smilax. Festoons of electric lights with colored bunting for a background conceal the ceiling and the side walls. The complete list of exhibitors is as follows:

Cars: Troy Motor Co., Cadillac and Fiat; Troy Automobile Exchange, Pierce-Arrow pleasure and Lippard-Stewart commercial; Bolton & Myers, Haynes; J. O'Hara, Pilot; Scott D. Nicholls, Ford and Reo; Paige-Detroit Motor Car Co., Paige-Detroit; Wm. L. Schupp & Sons, Oakland pleasure and Federal commercial; Close Bros., Knox pleasure and commercial; S. B. Ketchum Co., Buick; Franklin Motor Co., Franklin; Ilium Garage, Maxwell; E. V. Stratton, Hudson; Schenectady Welding & Repair Co., King; L. R. Mack, Packard; Albany Garage, Chalmers, Simplex. White and Peerless; George H. Snyder, Stearns-Knight pleasure and Saurer commercial; Wilbur Auto Sales Co., Kissel pleasure and Mack commercial; Payne Automobile Co., Studebaker; Troy Carriage Works, Rauch & Lang electrics, Speedwell, Krit and Case; E. H. Abbott, Overland and Stanley steamer; Aird Motor Co., Stutz, Premier, Apperson and Marmon; Monument Square Garage, Stevens-Duryea and Hupmobile; Herreshoff Motor Sales Co., Herreshoff; Motor Sales Co., Moyer.

Accessories: Standard Oil Co., lubricants; Rensselaer Vulcanizing Co., vulcanizers; Troy Spring Works, springs; J. M. Warren & Co., full line of supplies; Chas. H. Turner, accessories; Motor Car Service Works, brazing and welding apparatus; Post & Lester Co., full line of supplies; Cox Brass Mfg. Co., windshields, brass parts and oxy-acetylene welding outfits; Hinsdale Electric Co., Willard storage batteries; Albany Hardware and Iron Co., Fisk tires and accessories; E. H. Brunelle, Indian motorcycles.

#### Portland Holds Its "Fifth Annual."

After a full week of jostling crowds, in spite of the inclement weather that prevailed, the Portland (Ore.) Trade Automobile Association closed its fifth annual show, which was housed in the State Armory, on Saturday night last, 31st ult. All told, more than 90 separate exhibits were staged, the list of exhibitors being considerably larger than in any previous year. Among the makes of cars exhibited, and the accessory exhibitors, were the following:

American, Cadillac, Cartercar, Chaimers, Chandler, Chevrolet, Cole, Hudson, Hupmobile, Jeffery, King, Lozier, Maxwell, Metz, Mitchell, Oakland, Oldsmobile, Packard, Paige-Detroit, Reo. Stevens - Duryea, Studebaker. Stutz. White, Winton and Velie; Detroit and Rauch & Lang electrics. Accessories: Gas Power & Supply Co.; Ballou & Wright; Archer & Wiggins; Chanslor & Lyon; Berger Cyclecar & Supply Co.: N. Y. Auto Painting Co.; Motometer Co.; Blodgett Vulcanizing Co.; Fred Dundee; Landay Auto Co.; Standard Oil Co.; Auto Painting Co.

#### Easton Show for Hospital Benefit.

Easton, which is in Pennsylvania, is to have an automobile show and it is to be a show quite out of the ordinary, for neither are Easton dealers back of the venture nor will they profit directly from the gate receipts. Instead, the show has been organized and will be held under the auspices of Company I of the 13th Infantry of the National Guard of Pennsylvania, specifically for the benefit of the General Hospital. Needless to add. the exhibits, which are to include commercial vehicles as well as pleasure cars, will be housed in the State Armory. The show will be opened on February 18th and continue until the 21st.

#### Soldering Without Real Solder.

Because there happens to be no "regular" solder on hand, it does not necessarily mean that a soldering job cannot be done. Babbit, type-metal, lead or most any of the soft alloys can be used with fairly good results.

#### CHICAGO FLAVOR IS LENT TO MINNEAPOLIS EXHIBIT

Chicago Show Cars Under "Stained Glass" Roofs in Coliseum and Armory—Carpetted Aisles Between the Exhibits.

That Minneapolis which invariably is followed by the abbreviation "Minn.," is in the throes of its seventh annual automobile show, and it is a show which has a whole lot of things in common with its Chicago predecessor. Many of these things are the cars that helped make the Windy City exhibit, for as was the case last year, quite a few of the exhibits have been transplanted bodily; another thing is that some of the Chicago show decorative scheme has been "swiped"; and still another is that Minneapolis, also, has both a Coliseum and an Armory and both of them are just about chock full of cars and trucks and accessories and lumbering farm tractors. On Saturday afternoon, 31st ult., the doors of both buildings were thrown open and will remain open until Saturday, 7th inst.

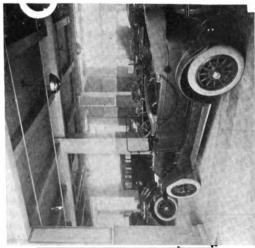
All told there are upward of 260 cars of very nearly all the brands on the market on view and these, together with a representative gathering of accessory exhibitors, repose beneath a "stained glass" ceiling that is at least a fair replica of the dome that covered the Chicago show. Furthermore, a thing almost unheard of in an automobile show, the aisles are carpeted. Fringing the walls, there are great landscape paintings somewhat like the ones that last year disguised the barrenness of the halls. And over them and in front of them there are rows and rows of purple electric lights. The balcony has been given what closely resembles a real marble front with figures in bas-relief. In the long list of exhibitors are the following:

Baker Electric Car Co., Baker electrics; Bowman & Libby, Overland, Marion, Willys-Knight and Garford commercials; Fawkes Auto Co., Ohio electric and Reo gasolene; Regal Sales Co., Regal; Satterlee Motor Co., Henderson; Frederick E. Murphy Automobile Co., Lozier, Mitchell, Paige-Detroit and Commerce commercials; H. E. Wilcox Motor Co., Wilcox commercials; Skellet Co., Kelly commercials; Northwest Kisselkar Branch, Kissel pleasure and commercial; Menominee Motor Truck Co., Menominee trucks; Motor Car Repair & Equipment Co., Ohio; Minneapolis Steel & Machinery Co., oil tractors; Deer & Webber Co., Velie.

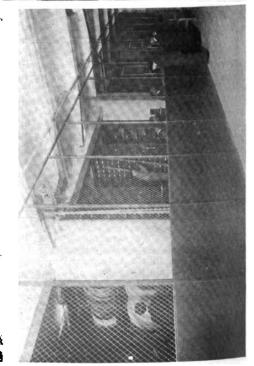
INTERIOR VIEWS OF LOCOMOBILE COMPANY'S RECENTLY COMPLETED METROPOLITAN HEADQUARTERS











FART OF SALES ROOM ON GROUND FLOOR STOCK ROOM IN THE SERVICE DEPARTMENT

#### SERVICE AND SALES WITH SERVICE FIRST

### New York Branch Building, Recently Completed for Locomobile, Laid Out With Car Owners as First Consideration—No "Red Paint" but Every Convenience—Unusual Structural Details.

It is quite the usual thing for an automobile concern, when putting up a new building, to make provision for expansion. Or perhaps it is better to say that it is almost unheard of for a company erecting a building to fail to provide for future development. It is not often, however, that the idea is carried out as fully and, be it said, as economically, as in the splendid edifice recently completed for the New York branch of the Locomobile Company of America and just brought into full working swing, having been occupied for a little more than a month.

Standing just off Broadway on 61st street, the building may almost be said to front on Broadway because of the acute angle the street makes with the main thoroughfare. So it gets much of the benefit that accrues to a building directly on the big avenue—thanks not a little to its striking proportions—while it just escapes the weight of the financial burden entailed by a Broadway frontage.

#### Everything in One Building.

The building stands 11 stories high, not including the basement, and of these the Locomobile company needs for its present business but six stories. The other five are to be leased-one or two already have been taken-to other automobile concerns. Of course, the rental from these five floors will help not a little in making both ends meet and overlap to a satisfactory extent. John F. Plummer, manager of the metropolitan branch of the Locomobile company, is particularly pleased with the way this part of his plan is working out. It is, however, but one of the details of a well conceived whole.

"I know it is a little out of the usual run of things to have both service and sales departments in one building, and that in such a location as we have," he said. "But when there arose the question of having salesrooms in one place and a service station somewhere else, perhaps a good many miles away—well, I couldn't quite see it, that's all. The sales rooms must have a good location, and that costs money. They must be on

the ground floor, and it's the ground rent that looms largest. If you have a service station somewhere else you have to pay another ground rent for that. So we have one building housing all the departments with the salesrooms on the



LOCOMOBILE SERVICE STATION

ground floor and the service and other departments above; and between the economy resulting from paying one ground rent instead of two, and from the rental of the extra floors, I believe we will find that we have made a very satisfactory and practical arrangement, and one that benefits our owners, as well as ourselves, financially.

"Another thing," said Plummer, looking around the main floor with a satisfied eye, "we have not put a dollar into unnecessary ornamentation; we have kept clear of red paint and feathers. But there is not a thing we could think of that would make our building better that has been omitted, as far as we know.

Everything is thoroughly good, but nothing is gaudy."

And this is true. The ground floor salesroom is broad and spacious, is not cut up, and is unusually well lighted. But it is finished throughout—walls as well as furniture—in neutral tones. The general effect is unusual and at the same time is distinctly pleasing, and there is no tendency for the eye to wander when it should be resting on the car. Rather, the gray provides a fine background for the machines, accentuating their fine finish and helping them look their best.

#### Elevator of Huge Proportions.

Perhaps the most striking feature of the building is the way in which the elevator problem has been worked out. This question always is a vexing one, for the big "lift" not only occupies a lot of room of itself, but it must be surrounded by a fire-wall, and it spoils a lot of space that it does not actually occupy, interferes with lighting, complicates maneuvering cars when the floors are fully occupied and generally is a bother. But in the case of the Locomobile building the elevator, though probably the largest of its kind in the city, is wholly outside the structure. The shaft is built against the rear wall of the building, with doors opening on every floor-including the basement, of course-and the interior is left clear. Some idea of the saving in space that is effected by this plan may be gleaned from the fact that the elevator platform is 30 feet long. Incidentally, it is an elevator with power at least in proportion to its size, for it will raise a maximum load of 16,000 pounds. It has two speeds, 40 feet per minute and 75 feet per minute; for the heavier loads the low speed is employed. The biggest trucks built can be handled and two pleasure cars can be accommodated at once.

The outside rear elevator is made possible by the fact that the Locomobile company has acquired a strip of land extending back to 60th street and wide enough to permit two cars to pass. This is the entrance for all cars, and at the "postern gate" there is an office in which

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there always is an attendant who checks all cars passing, and nothing goes in or out without giving a proper account of itself.

Skipping from the postern gate to the service department, which is located on the second floor and occupies all of it—though there is plenty of room for caring for many more Locomobiles than there are now in the metropolitan district—the door opens on what is one of the most carefully thought out features of the establishment. The Locomobile idea is that service is more important than sales, or at least that it requires more careful attention, and the manager takes pains to make his convictions on the subject clear.

#### Dignified Service Department.

"Here is a service department that is equipped to give real service," said Plummer. "If an owner comes in here for service he can get it, and all that pertains to it, right on this floor. If any question arises, whether it be a mechanical question or a financial question, or a policy question, it can be answered, and answered fully, right here. It isn't necessary to chase off somewhere to hunt up the cashier, or a mechanical man—they are here, and so is the stock room.

"Another thing: We have tried to dignify the service department, and make it an orderly, businesslike department where things are done with just as much dignity and with just as much courtesy to customers as in the sales department on the ground floor. We aim to have the owner feel—and know—that the fact of his having bought a car does not relegate him to a slip-shod, inconvenient hole-in-the-wall for future dealings with us. The treatment he will receive will be along the same lines as the treatment he received when he was on the edge of buying a car."

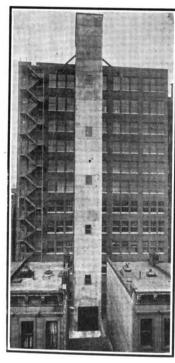
#### Laying Out the Floors for Work.

On the floor above the service department is the second-hand car department. Part of this floor is used as a delivery place. Cars are placed there for the inspection of owners, who can, if they choose, spend a whole afternoon going over their machines and getting acquainted, so to speak, without being disturbed. The abundance of space and the floods of light make the inspection of a car a pleasure.

The five floors above the second-hand department—from the 4th to the 8th inclusive—are the "rental floors," and as long as they are not needed by the Locomobile business will be rented. As the

business expands they will be taken up, one by one.

The three upper floors are devoted to repair work. One floor is used for quick, light repair work—the 9th—while the 10th is the main repair floor for the general run of work and the top floor is for the heavier jobs. Here trucks are cared for and here also are the machine shop and forge room. The latter department, as many know to their sorrow, often is a real man's size problem, for the insurance people permit no open



LOCOMOBILE OUTSIDE ELEVATOR

flame in the building proper, and yet a forge room that is not conveniently located for access to the repair floors is a nuisance in many ways. The demands of all concerned have been met in this case by building a forge department large enough so that a big truck can be run in, and by separating it from the main floor not only by the usual fire walls, but also by an open well with two fire doors. To all intents and purposes-and in the eyes of the insurance companies-the forge room is in a separate building, while it is close to the repair floor and any job that needs much attention from the smiths can be run right in and placed handy to the forge.

The basement—which, incidentally, is blasted out of solid Manhattan rock—contains the boilers, of course, washing places for cars, and is used for the deliv-

ery and reception of machines, for storage of various material, etc.

The elevator service of the building is not confined to the big car elevator. Arrangements have been made so that the occupants of the rented floors will be served just as in a modern office building. For their use there is a separate entrance on 61st street, handsomely finished, on the east end of the building, and a special elevator. On the opposite side of the building is an elevator for employes, who also have their own entrance on the west side.

#### Cars That Have Individuality.

Back in the manager's office, which is quietly handsome in its appointments and very comfortable withal, Plummer explained another feature of the Locomobile establishment.

"A man who owns a car," he began, "knows every part of it—or else his chauffeur does-and knows all its little individual ways and tricks. To him it is not merely 'a car'-it is 'the car'-the only car there is, because it is his own. On the other hand, when that machine goes into the shop it loses its individuality. It becomes just 'a car' to the mechanics. It is the same to them as hundreds of others. If the owner or an interested chauffeur could follow the car through its repair work he would make suggestions and give all sorts of hints based on his personal acquaintance with that particular machine. But that is impracticable, of course. So there really exists a very wide gap between the owner and the repair-shop.

"We have wanted to bridge this gap as much as possible, and to come as near as possible to doing our work exactly as it would be done if the owner could direct it. To this end we employ a corps of inspectors who are intended to act as the owners' agents as far as such a thing can be accomplished.

#### Seeing Through the Owner's Eyes.

"The method of procedure is worked out with this end in view. When an order for repair work comes in an inspector is detailed to go out in the car with the owner or the chauffeur and get into the owner's place as much as he can. The inspector finds out all he can about the machine in its capacity as 'the car' and for the time does his best to lose the idea that it is just 'a car.' Thus he is able to follow the car through the repair work-each inspector follows up his own cars always-much better than if the car had no individuality to him. But his work does not end there. After the job has been completed he again

goes out with the machine and the owner, and makes sure that things are as they should be. If there is anything that the owner is not quite satisfied with the inspector is in an infinitely better position to understand how he feels than if he had no 'personal acquaintance' with the machine. The system works beautifully, and is of the greatest help to us in doing our work as we want it done-that is, to the satisfaction of our owners. The inspectors are chosen for their intelligence and their ability to take the owner's side of the caseto get into his mental attitude and see things through his eyes, and know the

#### Questions That Are Eliminated.

reasons for his ideas.

"Another thing we believe is that a man is entitled to know what a repair job is going to cost him. Therefore we always make an estimate before doing any work, tell the owner what the cost will be and, when the work is done, the bill is sent for just that amount-no more and no less. We know the Locomobile so well that we rarely fail to make good on these estimates, and we think a man feels a lot better to be told that his work will cost \$40 and receive a bill for \$40, than to be informed that it will be 'somewhere about \$25 or \$30' and subsequently be presented with a bill for \$35.

We never have any of those little meetings where the owner and the chauffeur confer over a bill and the chauffeur puts his finger on an item or two and declares 'No, sir! We never got that cotter-pin, an' they shouldn't charge us for that gasket.' All that sort of thing is obviated by settling the whole question so that the owner knows what the bill will be before a tap of work is done.

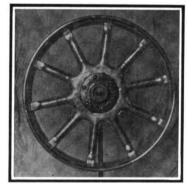
#### Ideals Embodied in Building.

As for the general construction of the building, it is almost unnecessary to state that it is modern to the last degree-modern particularly in the way in which provision has been made to keep well within all fire regulations and in the simple and effective way in which everything has been made convenient. Simplicity and openness is conspicuous everywhere, not only in the way in which the building is laid out, be it said, but also in the way in which business is transacted. And one cannot go far in an inspection of the place without realizing that when Plummer says that he believes service outranks sales, he not only means every word of it, but he has perpetuated his belief by putting it into the building itself.

### NO-FELLOE STEEL WHEEL CLIPS RIM TO SPOKE ENDS

### Welded Pressed Steel Construction That is Light and Strong—Demountable but Needs no Supporting Bands.

The modern automobile wood wheel, with quick detachable rim, would seem about as simple in construction as it can well be made, and certainly the service it renders leaves scant room for criticism. A wheel that is even simpler, however, while of entirely different construction, just has made its appearance as a commercial offering. Not only is the wheel entirely of steel, but it has no felloe, the tire-carrying channel being clipped di-



"NO-FELLOE" STEEL WHEEL

rectly to the ends of the spokes. The No-Felloe pressed steel wheel, as it is called, has been brought out by the Newmastic Co., of 68th street and Broadway, New York.

The No-Felloe wheel is made up of two pressed steel halves, the dividing line passing through the center of the wheel at right angles to the axle. The two halves are welded together, and when this has been done the spokes have the form and the general appearance of wood spokes. The end of each spoke is fitted with a pressed steel cup which sets in the open end, and with a clip and bolt, the two latter for gripping the rim.

The rim or channel in which the tire is mounted has on its inner circumference two annular grooves. The clips in the ends of the spokes grip these grooves and hold the rim securely. The clips, when the bolts are drawn up tight with a wrench, exert an extremely powerful wedging action, pressing outward against the rim and at the same time automatically centering it. The wedging clip comes under the rim on one side and on the opposite side there is a stationary lug

which is part of the pressed steel cup inserted in the end of the spoke. The permanent lug is on the inside, so that when the clip bolts are loosened the rim can be slipped off, the clips dropping sufficiently for the purpose.

The particular advantage claimed for the No-Felloe wheel, as a steel wheel, is that its demountable rim makes the carrying of a spare wheel unnecessary, as an inflated tire can be carried on a spare rim. It is obvious that steel is not subject to the alternate swelling and drying out and other troubles that wood is heir to and, further, the makers of the No-Felloe wheel claim that it is practically twice as strong as a wood wheel of the same weight, and that it can compete with the wood wheel in the matter of cost.

#### Army Cars to be Marked by Flags.

Automobiles which are in official use by army officers will hereafter be known by the flags they fly, the flags having been designated by the Quartermaster Corps. They are:

General officers, including chiefs of bureaus of the War Department—Major General, two stars of white muslin 634 inches from point to point, resting upon two points on a field of red bunting; Brigadier General, same as for Major General, having one star placed in center of flag.

Artillery district commanders—Red bunting, bearing two crossed cannon with a medallion at intersection containing a projectile, all of yellow muslin, 16½ inches long, placed in the center of the flag.

Chief umpires at maneuvers—White bunting with two scarlet stripes three inches wide crossed diagonally from corner to corner.

These flags will be rectangular in shape, maeusring two feet two inches fly and one foot six inches hoist, to be attached to suitable staffs.

#### Dealers' License Not for Hired Cars.

The dealer in Wisconsin who wishes to use any of his cars for hire must equip them with a private owner's license, according to a decision just handed down by the attorney general of that State; his opinion was rendered at the request of Marx Bros., of Cashton, Wis., who stated that they wished to use a car for hire occasionally. The decision in brief is:

"A dealer is not authorized to use a motor car for hire without having the same regularly registered. A dealer's number on such car will not be protection to the person using it."



1,076,539. Extension Tower. John I. Ackley, Penn Yan, N. Y. Filed Feb. 26, 1912. Serial No. 680,035. (Automobile fire apparatus.) 21 claims.

1,076,551. Valve Mechanism for Internal Combustion Engines. Vestal P. Coffin, Boise, Idaho. Filed Feb. 3, 1912. Serial No. 675,390. (Piston valve motor.) 3 claims.

1,076,556. Automobile-Jack. James T. Dillon, Greenwich, Conn. Filed April 3, 1912. Serial No. 688,345. (Castor jack attached to car axle.) 4 claims.

1,076,557. Demountable Wheel. Thomas I. Duffy, Chicago, Ill., assignor to Henry Ellsworth and Albert E. Cross, Chicago, Ill., copartners doing business under the firm name of Ellsworth & Cross. Filed July 1, 1910. Serial No. 669,846. (Tapered hub with bolt fastenings for wheel.) 2 claims.

1,076,558. Hub for Demountable Wheels. Thos. I. Duffy, Chicago, Ill., assignor to Henry Ellsworth and Albert E. Cross, Chicago, Ill., copartners doing business under the firm name of Ellsworth & Cross. Filed Dec. 13, 1911. Serial No. 665,442. (Tapered hub with ratchet fastening.) 6 claims.

1,076,559. Axle for Motor Vehicles. Thomas I. Duffy, Chicago, Ill., assignor to Henry Ellsworth and Albert E. Cross, Chicago, Ill., copartners doing business under the firm name of Ellsworth & Cross. Filed June 5, 1912. Serial No. 701,722. (Live axle with open framework.) 3 claims.

1,076,560. Bearing. Thomas I. Duffy, Chicago, Ill., assignor to Henry Ellsworth and Albert E. Cross, Chicago, Ill., copartners doing business under the firm name of Ellsworth & Cross. Filed June 5. 1912. Serial No. 701,723. (Removable unit differential gear.) 19 claims.

1,076,561. Brake Mechanism for Motor Vehicles. Thomas I. Duffy, Chicago, Ill., assignor to Henry Ellsworth and Albert E. Cross, Chicago, Ill., copartners doing business under the firm name of Ellsworth & Cross. Filed June 5, 1912. Serial No. 701,724. (Toggle brake mechanism.) 7 claims.

1,076,562. Brake Mechanism. Thomas I. Duffy, Chicago, Ill., assignor to E. C. Sales Co., Chicago, Ill., a corporation of Illinois. Filed Oct. 28, 1912. Serial No. 728,216. (Cam-actuated brake mechanism.) 8 claims.

1.076.563. Brake Mechanism. Thomas I. Duffy, Chicago, Ill., assignor to E. C. Sales Co., Chicago, Ill., a corporation of Illinois. Filed Oct. 28, 1912. Serial No. 728,217. (Double-band brake mechanism.) 4 claims.

1,076,564. Brake Mechanism. Thomas I. Duffy, Chicago, Ill. Original application filed June 5, 1912, Serial No. 701,724. Divided and this application filed Oct. 28, 1912. Serial No. 728,218. (Brake equalizing system.) 4 claims.

1.076.566. Illuminated Sign. Peter Lee Ferguson and Joseph W. Wheelwright, Ogden, Utah. Filed Sept. 13, 1912. Serial No. 720,232. (License numl er carrier and lamp.) 2 claims.

1,076,571. Exhaust Silencer. Francis G. Hall, Jr., Dansville, N. Y. Filed Feb. 1, 1911. Serial No. 605,902. (Two chambered expansion type muffler.) 8 claims.

1.076.578. Traction Engine. Benjamin Holt. Stockton, Cal. Filed Feb. 18, 1913. Serial No. 749.168. (Tractor of the caterpillar type.) 1 claim.

1.076,589. Internal Combustion Engine. Hermann Lemp, Lynn, Mass., assignor to General Electric Co., a corporation of New York. Filed Jan. 26, 1912. Serial No. 673,543. (Motor of the fuel injection type.) 7 claims.

1.076,591. Wheel with Multiple and Balanced Rims. Henry Lotte, St. Jean d'Argely, France, Filed March 11, 1911. Serial No. 613,721. (Wheel with two rims balanced on levers pivoted to central rim.) 6 claims.

1,076,619. Internal Combustion Engine. Leon Wygodsky, New York, N. Y., assignor to Wygodsky Engine Co., New York, N. Y., a corporation of Delaware. Filed April 8, 1910. Serial No. 554,136. Renewed March 14, 1913. Serial No. 754,355. [Fuel injector.] 24 claims.

1,076,660. Engine Starting Device. George J. Burkhardt, Burlingame, Cal. Filed Oct. 2, 1911. Serial No. 652,343. (Lever starter.) 1 claim.

1,076,668. Time Register. Louis H. Friedman, Norfolk, Va. Filed Dtc. 18, 1912. Serial No. 737,567. (Automobile time register started by control levers of car.) 3 claims.

1,076,678. Vehicle Wheel. Martin D. Krespach and James R. Hazeley, Philadelphia, Pa., assignors to Eclipse Wheel Co., a corporation of New Jersey. Filed Oct. 17, 1912. Serial No. 726,193. (Wood wheel construction.) 3 claims.

1,076,699. Automobile Lamp Attachment, William Q. Pfahler, Ohio. Filed March 29, 1913. Serial No. 757,681. (Pedal-operated headlight shutter.) 5 claims.

1,076,701. Bearing. Marcellus Reid, Cleveland, Ohio. Filed Feb. 10, 1912. Serial No. 676,-751. (Roller Bearing with rollers in two joined halves.) 2 claims.

1,076,719. Emergency Automobile Tire. Luther M. Tichenor, Owensville, Ind. Filed March 13, 1913. Serial No. 754,086. (Split emergency tire and fastenings.) 1 claim.

1,076,730. Separable Rim for Automobile-Wheels. William M. Wirth, St. Louis, Mo. Filed Aug. 19, 1912. Serial No. 715,830. (Detachable rim with pin-and-slot fastenings.) ! claim.

1.076,735. Wheel. Walker Edmands Babbitt, Worcester, Mass. Filed Dec. 5, 1911. Serial No. 664,040. (Wheel with air-cushioned hub.). 14 claims.

1,076,736. Cooling System for Internal Combustion Engines. Charles Whiting Baker, Montclair, N. J. Original application filed March 20, 1912, Serial No. 685,045. Divided and this application filed July 10, 1912. Serial No. 708,575. (Internal cooling by water in cylinder.) 8 claims.

1,076,744. Demountable Rim for Pneumatic Tires. Coy Richard Cantrell, St. Louis, Mo. Filed Nov. 23, 1912. Serial No. 733,189. (Detachable rim with recesses to receive lugs on felloe.) 1 claim.

1,076,783. Primer for Internal Combustion Engines. William J. Presley, Grand Haven, Mich. Filed Jan. 13, 1913. Serial No. 741,685. (Spraying primer with hand pump.) 4 claims.

1,076,799. Draft Attachment for Automobiles. Benjamin Urquhart, Plainfield, N. J. Filed November 7, 1910. Serial No. 591,161. (Winding drum attachable to wheel spokes.) 6 claims.

1,076,854. Internal Combustion Engine. William J. Wright, Franklin, Pa., assignor to Wright Engine Co., Pittsburgh, Pa., a corporation of Delaware. Filed Jan. 11, 1909. Serial No. 471,554. (Compound engine.) 18 claims.

1,076,883. Spring Wheel-Hub. Horace H. Hallett, Easton, Pa. Filed May 22, 1913. Serial No. 769,150. (Wheel with spring-cushioned hub.) 2 claims.

1.076.903. Explosive Engine. Raymond C. Mitchell and Harry M. Neer, Springfield, Ohio, assignors to Herman Voges, Jr., Springfield, O. Filed Nov. 28, 1910. Serial No. 594.433. (Motor with inclined valves in head and overhead camshaft.) 1 claim.

1,076,904. Non-Sidding Device. Willis Grant Murray, San Francisco, Cal. Filed Feb. 7, 1913. Serial No. 746,843. (Rigid grips on yielding supports.) 6 claims.

1.076,911. Internal Combustion Engine. Geo. R. Rich. Oak Park, Ill. Filed June 12, 1912. Serial No. 703,201. (Rotary sleeve-valve motor.) 14 claims.

1,076,014. Resilient Wheel, Edward A. Schlairet, Mount Vernon, Ohio, Filed July 31, 1012. Serial No. 712,425. (Wheel with tire sections

supported by radial pneumatic cylinders.) 1 claim.

1,076,915. Fuel Pump for Internal Combustion Engines. Hans R. Setz, St. Louis, Mo., assignor to Fulton Iron Works, St. Louis, Mo., a Corporation. Filed Dec. 9, 1912. Serial No. 315, 660. (Pump for injection-type motors.) 4 claims.

1,076,916. Tire. Edwin J. Shaut and William A. Dunham, Jackson, Mich. Filed Oct. 31, 1912. Serial No. 728,895. (Tire with rubber tread and internal springs.) 1 claim.

1,076,953. Internal Combustion Engine Philip S. Claus, Detroit, Mich. Filed May 27, 1912. Serial No. 699,869. (Cylinder that rotates and acts as sleeve valve.) 3 claims.

1,076,972. Valve for Engines. Albert M. Gibert, Detroit, Mich. Filed June 14, 1912. Serial No. 703,616. (Piston valve in cylinder head.) 15 claims.

1,076,974. Automobile Attachment. James Walter Golden, Sweetbriar, N. D. Filed Dec. 18, 1912. Serial No. 737,453. (Flexible shaft operated from fan-shaft, for buffing wheel, etc.) 2 claims.

1,076,981. Tire-Deflating Cap. Jacob Henry Hard, Osmond, Neb. Filed April 3, 1912. Serial No. 688,194. (Device for depressing tire valve to permit escape of air.) 1 claim.

1,077,030. Attachment for Automobiles. Theodore Clyde Bean, Glen Ullin, N. D. Filed Oct. 8, 1912. Serial No. 724,514. (Winding drum attached to wheel hub.) 2 claims.

1,077,033. Internal Combustion Engine. Emil Gustave Bogusch, Llano, Tex., assignor of one-half to M. D. Slator, Llano, Tex. Filed April 30, 1913. Serial No. 764,559. (Telescopic pistons reciprocating in opposite directions.) 1 claim.

1,077,044. Automobile Wheel and Tire. Geo. M. Davenport, Keo, Ark. Filed April 14, 1913. Section No. 761,028. (Wheel with springs between felloe and tire.) 2 claims.

1,077,058. Method of Assembling Radiator-Sections. Frederick A. Feldkamp, Newark, N. J., assignor to Electrolytic Products Co., a corporation of New Jersey. Filed Nov. 5, 1912. Serial No. 729,571. (Construction of radiators with narrow strips or wires at edges of sections.) 5 claims.

1,077,085. Vehicle Tire. Richard L. Leach, Honolulu, Hawaii. Filed Oct. 2, 1912. Serial No. 723,511. (Resilient metal tire construction.) 1

1,077,094. Starting Device for Explosive Engines. Lester M. Mowe, Deep River, Wash. Filed Oct. 2, 1912. Serial No. 723,585. (Ratchet mechanism for rotating shaft.) 1 claim.

1,077,118. Power Transmitting Mechanism.
Joseph E. Bissell, Pittsburgh, Pa. Filed March
20, 1909. Serial No. 484,741. (Reciprocating
pawls driving ratchet wheels.) 2 claims.

1,077,124. Shock-Absorber. George H. Dangleman, Philadelphia, Pa. Filed March 28. 1913. Serial No. 757,405. (Friction disk shock absorber.) 1 claim.

1,077,128. Vehicle Tire. Henry J. Doughty, Edgewood, R. I. Filed Sept. 25, 1913. Serial No. 791,785. (Tire casing construction.) 1 claim.

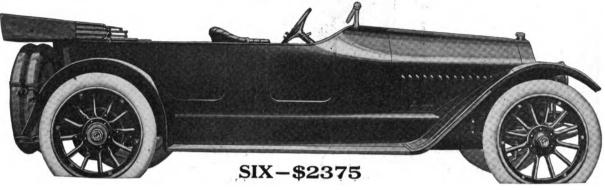
1,077,129. Endless Tread for Automobile Wheels. Theodore Douglas, New York, N. Y. Filed April 23, 1912. Serial No. 692,676. (Chainbelt tread.) 2 claims

1,077,150. Internal Combustion Engine. Herbert McCormack, West Chester. Pa. Filed Aur. 21, 1906. Serial No. 331,513. (Motor with ports in piston.) 6 claims.

1,077,153. Lamp. Charles G. Myers, Clereland, Ohio. Filed Nov. 15, 1911. Serial No. 660-326. (Lamp with lenses designed to cut out certain rays.) 9 claims.

1.077,161. Internal Combustion Engine. David Roberts, John William Young, and Charles James. Grantham, England. Filed Dec. 4, 1911. Serial No. 663,929. (Injection motor with hot bulb ignition.) 1 claim.

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### Winning Line of Cars

E VERY dealer and every motorist in the country have been waiting for the right Six-and here it is. They've wanted a Six selling at the right price-they've wanted a Six built by a manufacturer with years of experience—and a reputation for building a reliable product of the highest quality. That's just what this new National Six is -the right Six at the right pricebacked by the quality, faith, integrity and honesty of product that have made the National car worldfamous. The National Company were the first builders of successful 6-cylinder cars, making their first in

This new National is nothing short of a marvel. Beautiful, powerful, efficient, economical and, in fact, the climax of the National's success in car making since its pioneer beginning. It embodies all the National's internationally recognized principles of superiority. No other manufacturer has ever built its equal.



National 40, Seven Passenger Touring Car



This shows the beautiful, graceful lines of the cowl and hood of new National Six; instrument board, with everything convenient; control levers in center; left side drive; access to both front





National Six, Three Passenger Coupe

To see this new car is to desire it — to ride in it once is to determine to possess it.

#### First to improve European styles

Other makers have imitated the styles originated in Europe-but the National improves these advanced foreign designs. Nothing obstructs or spoils the continuous beauty of the long body lines. Both sides gradually converge toward the narrowed radiator, giving the whole car an original appearance and a "pointed" style. Smart slope from cowl to radiator.

#### Brief Specifications—National Six

Motor, six-cylinder, 334x54-inch, cast en bloc. Tire pump, integral part of motor. Clutch, self-contained aluminum cone. Starting and lighting, electric two unit system. Transmission, aliding gear selective type, three speeds forward, one reverse. Gauge 56 inches. Oiling, crank case constant level, force feed, with gear driven pump. Ignition, high tension, dual magneto with storage battery. Tires, 36x44. Firestone demountable rims. Air pressure gasoline feed, generated by small pump in crank case. Capacity 23 gallons. Automatic carburetor. Two sets of brakes on 16-inch rear wheel drums. Bevel gear drive through straight line shaft with universal joints and torsion member. Full floating rear axle. Left side drive. Access all four wide doors. Single springs, front, special National cantilever construction, rear.

Equipment:—Top complete with side curtains and boot, ventilating rain vision wind shield, extra Firestone rim. electric lighting and starting systems, 12-inch double bulb electric headlights, electric license tail light. Warner speedometer, electric horn. tools and jack.



National 40, Two Passenger Speedway Roadster

NATIONAL MOTOR VEHICLE CO., Indianapolis, Ind., U.S. A.



### Dealers: Sell Detroit Electric Cars During the Winter

One reason why our business shows a marked increase this winter is that owners recognize in the Detroit Electric an-all-the-year-round car.

ELECTRIC

The Detroit Electric saves the price of an extra car. It saves the salary of a chauffeur and eliminates chauffeur troubles. It saves in operation and upkeep cost. And the owner knows exactly what his expenses

are for garaging and power.

Every year more people are depending upon the Detroit Electric as a

12 - months - in-the-year convenience; others, when putting up their touring cars, are buying Detroit Electrics in preference to limousines. Thus, for at least seven months in the year the Detroit Electric owner secures limousine luxury and comfort at one-fifth of the cost of limousine maintenance.

Detroit Electric owners appreciate the advantages of having a car that is always ready, at any time of the day or night; a car that combines the newest appointments with simplicity in design

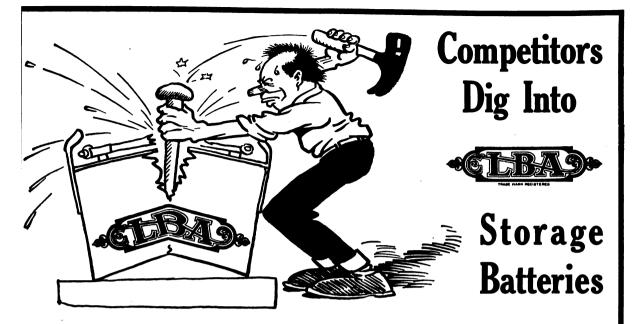
and strength in construction; a car of beauty and luxury rare among motor cars.

The winter months ordinarily

are thought to be dull months. For us they are setting a new sales record. The profits of Detroit Electric dealers are more than twice the profits of dealers for any other electric—for they sell twice as many. Why not sell Detroit Electric cars during the winter months? This is the best time to investigate. Write for literature and our opportunity to dealers.

### Anderson Electric Car Company DETROIT, MICH.

Builders of The Detroit Electric Largest Manufacturers of Electric Pleasure Vehicles in the World



in the vain hope of learning how to successfully imitate the inside as well as the outside, but while the may be imitated, it remains proof against duplication.

The compounds employed in constructing plates are a secret known only to ourselves.

The "know-how" is the result of vast experience gained only during a long period of time spent in the manufacture of starting and lighting batteries in quantities such as have not even been approached by any other maker.

And without the experience secured by long time and magnitude of production no manufacturer can hope to offer storage batteries of excellence comparable with that of the

Again—while others are acquiring this experience, the forging ahead—improving—bettering where possible—and further widening the gap between itself and its imitators.

These are some of the reasons why we have steadily increased our output to the enormous total of 250,000 batteries per annum, furnished to more than 100 manufacturers of automobiles.

#### WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd St.

Detroit Branch: 736, 738 and 740 Woodward Ave.

Chicago Branch: 2241 Michigan Ave.

San Francisco Branch: 243 Monadnock Bldg.

Indianapolis Branch: 438 and 439 Indiana Pythian Bldg.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

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### Seven Solid Reasons for Using Gurney Bearings

THE steadily increasing number of users of Gurney Bearings bear very pertinent witness to the real service these bearings are giving. These people do not use our bearings because they like our talk. Their reasons for using them are of more substantial nature. Our talk is worth less than nothing except in so far as it is backed up by the solid facts.

What are the facts behind the Gurney success? Distinctive features of Gurney Ball Bearings.

- 1. Unique Design. Full Type, No Filling Slots, Full Depth of Raceways.
- 2. Thrust Capacity that puts them in a class by themselves, in Radio-Thrust Bearings up to 100%.
- 3. Single piece, Jointless Separator, permitting the maximum number of the maximum size of balls.
- 4. Raceways ground to the contour proved and admitted to be the most efficient, and always so ground.
- 5. Rings ground to a degree of concentricity unapproached by any other make.
- 6. Made to a degree of accuracy unequalled by any others.
- 7. Uniformity. Every ring that goes through our factory is not only produced by processes that give it these distinctive characteristics, but is subjected to drastic tests, to the most minute and rigid inspection, which none but the perfect can pass. If it were not for our wonderful processes of production we could not afford to subject our products to the hardships of testing and inspecting they have to undergo. The latter is made commercially possible by the former. For these reasons our bearings have, as perhaps the most important of all this quality of uniformity.

Gurney Ball Bearing Company

Jamestown, N. Y.

7 7 7



Goodrich Tires give the motorist everything science and skill can produce in quality of construction and quality of service.

Now Goodrich, as usual, takes the next step in advance, and improves the *whole* tire service with what every judge of rubber and every judge of construction will say is the last word in inner tubes. We call it the

### Goodrich Indian Tube

We give it this name because it is made of the cream of the finest rubber gathered by the native Indians in the richest rubber country.

It is hardy, enduring, full of vitality—like an Indian.

It is built for speed-like an Indian.

It is brown-like an Indian.

It is the pure breed-like an Indian.

It is "best in the long run"—like an Indian.
You'll always know it by its color—copper-

You'll always know it by its color—copper-brown, Indian-brown.

The Goodrich Indian Tube will never be judged by the price, nor bought solely

because of the price. Like all Goodrich products it will stand on its perfect quality and its dependable delivery of full service.

The man who buys it will take the Goodrich word for it that his money never before bought such an inner tube as this *brown* tube, the "Indian."

For the dealer it will make that greatest of all business friends—the more-than-satisfied customer.

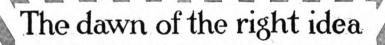


#### The B. F. Goodrich Company

Factories: Akron, Ohio Branches in All Principal Cities

al Cities

There is nothing in Goodrich Advertising that isn't in Goodrich Goods



# Teffery Company Compan

tonosha, Wis. U.S.

The first strictly high-grade car sold at a moderate price! The enthusiasm aroused by the new Jeffery Four at \$1550 has swept the country. Experts have conceded that many 1916 features have been anticipated. The use of the new monobloc, high-speed, light Jeffery motor has been recognized as the right idea at last. The unlimited capital, long experience and unequaled equipment of the Jeffery Company have made it possible to do what other builders have found impossible. The American motorist can now get power, comfort, economy, speed, reliability, high-grade quality for a really moderate price. Send for the Jeffery Circle and get the facts about this wonderful car.



### BOWER SAVES POWER"







### The Raceways

The fact that Bower Raceways are parallel at all points is of profound significance. For this reason the load is borne evenly by the roller along its entire length, and also for this reason the load produces no end-thrust.

Again, the rollers are self-aligning, never binding or slipping endways. Finally, the parallel position of the raceways obviates troublesome adjustments in Bower Roller Bearings.

Notice: The Bower Roller Bearing is patented in the United States and foreign countries. INFRINGERS of our patent right to MAKE, USE, VEND or SELL will be duly prosecuted.

**BOWER ROLLER BEARING COMPANY** 

Detroit, Michigan







### S P R I N G F I E L D Convertible Bodies



THE idea of the Spring-field Convertible Body is taking hold and

growing on the minds of every practical motorist. It is the solution of the problem of having a car that will give the freedom of the open tour-

ore and the open touring car and the protection of a full limousine—the advantages of two cars with the expense of but one. Several of the most progressive automobile.

progressive automobile manufacturers have seen the advantages of such a body and have listed Springfield Convertible Bodies as a desirable feature of their offering.

You should post yourself on this element of equipment, for it will open up not only a means of serving your custom better, but an added source of profit as well.

When you sell a chassis equipped with a Springfield Convertible Body, you earn a higher relative commission than by selling a standard car complete. The price of a standard chassis mounted with a Springfield Convertible Body is

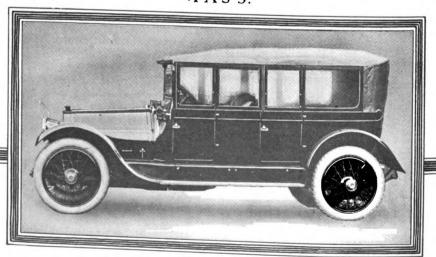
still well within reason, especially considering that it gives all the advantages of two cars, or two separate bodies for the same chassis.

Take the matter up with your manufacturer and if you cannot make the

necessary arrangements, write us direct. In the meantime, send for our illustrated booklet.



SPRINGFIELD METAL BODY CO. SPRINGFIELD MASS.



#### Cut This Out

Paste It on Cardboard or Tin and Hang It Up in Your Garage

Where to Use DIXON'S

Graphite Automobile Lubricants

**TRANSMISSION** Use No. 677 for all transmissions that use grease. Use No. 675 for all transmissions that are intended for oil lubrication.

Use No. 688 only in gears that are noisy or in housings that leak. Must be thinned with No. 677 to the desired consistency.

DIFFERENTIAL Use No. 677 in all differentials with shaft drive, also in chain-

driven cars that use grease in the differential. Use No. 675 in the differential of chain-driven cars that are intended for oil lubrication. Use No. 688 for noisy gears and leaky housings.

Must be thinned with No. 677 to the desired consistency.

TIMING GEARS If there is no connection with crank case, use No. 677; otherwise use oil with a little Motor Graphite, added. If grease can

be used and gears are noisy, use 50% No. 675 or No. 677 and

50% No. 688.

UNIVERSAL JOINTS Use No. 676. Will not throw out.

PUMP CUPS Use No. 676. Will not melt and run into radiator.

Overhead Valve Cups Use No. 676. Is not affected by the heat.

CUPS elsewhere than Use Cup Grease No. 5.

WHEEL Use Graphitoleo, but Cup Grease No. 3 or No. 5 may be used

SPINDLES if Graphitoleo is not obtainable.

ENGINE

Use Motor Graphite in splash systems only. Add an even teaspoonful of Motor Graphite to each quart of oil contained in the crank case. Add another teaspoonful of Motor Graphite to each third quart of oil put in crank case thereafter. It

can also be inhaled through the air intake of the carburetor.

CHAINS

Use Motor-Chain Compound. Clean the chain—melt the

brick of Motor-Chain Compound—soak the chain in the compound for 20 minutes or  $\frac{1}{2}$  hour—let chain cool. You then have on every pin in the chain a graphite bushing that will not squeeze out—the outside of the chain is well lubricated,

but is dry and hard, and will not pick up grit.

Sold by all dealers who are in business to sell service as well as to take your money

Made in Jersey City, N. J., by the

Joseph Dixon Crucible Co.

Established 1827



Worm Drive? Yes! Chain Drive? Yes! Shaft Drive? Yes!



O matter what specific problem you are trying to solve, Mr. Dealer, the Atterbury line offers you the widest range of possible solution. No matter whether you need a small truck or a large one—whether you want a worm drive or a chain drive—you'll be able to fit some one of the Atterbury trucks to your particular requirements.

And rest assured of this that whatever Atterbury truck you do sell will be a thoroughly tried and proven product—one that has back of it eleven years of exclusive truck manufacturing experience and which embodies most of the standardized points of manufacture by which other trucks are judged.

Add to this the fact that all parts which can be bought to better advantage from specialists than manufactured by ourselves are found in Atterbury trucks and you will readily understand the reason for Atterbury trucks.

Here is a list of standard parts found in Atterbury

Continental Motors, Brown Lipe Transmission, Bosch Magnetos, Lavigne Steering Gears, Stromberg Carburetters

#### THE ATTERBURY MOTOR CAR COMPANY

Black Rock, Dept. "M.W.," Buffalo, N. Y.



Pure fine-Para rubber—
a little sulphur—

our original construction;

that's all to a

### FISK Tube

IT'S A LOT though, for no other tube approaches the service-giving qualities of the Fisk.

DEALERS can offer the Fisk Tube to customers with the knowledge that it is backed to the limit by The Fisk Rubber Company and is everywhere giving perfect satisfaction. Our record is less than one complaint in 10,000 tubes sold, and we know of many Fisk Tubes in good condition after 3 years of service. Pure rubber does not harden, deteriorate or become porous. That is the reason for Fisk Tube Superiority.

We would be pleased to send interesting literature describing Fisk Pure Para Tubes

#### THE FISK RUBBER COMPANY

Factory and Home Office, Chicopee Falls, Mass.

Distributors-THE FISK RUBBER COMPANY OF N. Y.



Dealers

The patented valve stem and pad make Fisk Tubes the easiest of all for the repair man to handle. Fisk Branches in 40 cities afford instant service to Dealers. Write Dept. 23 for our Dealer proposition.

Better Working Conditions

Though the Use of Booth Felt

Booth Felt Goods are used by the majority of the makers of better cars, ax es and other parts where gaskets, washers, etc., are employed, as well as for countless purposes such as bumpers, squeak preventers, in window sashes, etc., etc.

A system has been adopted for the handling of our automobile business which is worthy of any manufacturer's consideration---to illustrate:

Ordinarily ---

Date of Order Specified Delivery Date

Order Put in Work

Delivery Date

January 10th

March 8th March 5th

March 8th

Never in the history of our business have we fallen down on detivery.

Occasionally ---

Date of Order Specified Delivery Date Actual Delivery Date

January 10th January 12th January 12th

No order could be placed that we cannot ship the next or same day as received.

Sometimes---

Date of Order
Specified Delivery Date
Order Cancelled

January 10th March 8th March 4th

Unforseen conditions come up making cancellation necessary.

Result

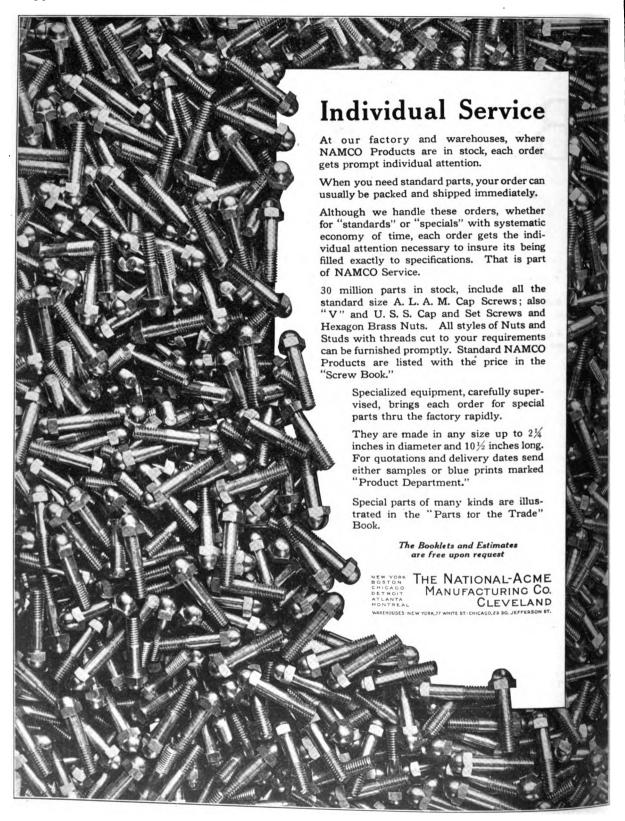
1st Case-Manufacturer received goods exactly as wanted.

2d Case-Rush order delivered on schedule.

3d Case—Cancellation or set back of order within four days of delivery, yet no goods spoiled, no damage claims arise.



N. E. BOOTH, 642-44 Pacific St., Brooklyn, N. Y. The BOOTH FELT CO., Ltd. Gananoque, Ont.



You beat the rain to it—every time—with Collins Curtains. Snap!—Snap! They're up in a flash. You don't leave your seat. Put them up from the inside of the car. The right curtain for the right place is always at your finger tips.

# Collins Ready Curtains

No more digging under the rear seat for curtains—causing discomfort and inconvenience to passengers. No more pulling out one wrong curtain after another. No more buckled and broken celluloid lights.

Collins Curtains, strapped to the bows under the top, are always ready, handy—at your finger ends. And it is simply a matter of seconds to undo the straps, slide them down the curved bracket bar and clinch into position.

Collins Curtains do not interfere with the lowering or raising of the now popular "one-man-top"—there is no cable or mechanism to get in the way and obstruct operation.

Be sure to have Collins Always-Ready Curtains on the car you buy. The manufacturer or the dealer from whom you purchase will probably be glad to see that you get them. For he wants to sell you as up-to-date a car as he can.



These up-to-the-minute manufacturers have recognized the advantage of Collins Always-Ready Curtains:

They are now regular equipment on the Cadillac, Chalmers, Winton, Stearns-Knight, Haynes, Cole, Pullman, Havers, Herreshoff, Jeffery, National, Lyons-Atlas, Apperson, Moon, Velie, Davis, Speedwell,

Jackson, Pratt, Palmer, Stanley, McFarlan, Henderson, Kline, Lexington and Pope-Hartford.

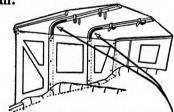
To Ford owners: We can now furnish Collins Always-Ready Curtains for Ford cars.

We license top manufacturers to furnish Collins Always-Ready equipment with new tops or to equip old tops.

You can have Collins Always-Ready Curtains on your new car. You can have Collins Always-Ready Curtains on the car you are now driving.

Any top builder can apply them at a moderate charge, and the Collins attachment is applicable to any top and to your old style curtains.

There are some imitations and evasions of the Collins patents, which in some respects resemble Collins



Curtains, but they do not have Collins advantages. Look for the exclusive Collins curved bracket bar and the Collins license tag.

Be sure to see Collins Always-Ready Curtains at the Boston and Philadelphia Automobile Shows—or better still, write us today and we will tell you where you can see them NOW.

Novelty Leather Works Dept. D Jackson, Michigan

### A non-skid tread without sacrifice of riding comfort

NON-SKID

Guaranteed

(in writing)

5,000 Miles

rires

A JAX non-skid tires are comfortable to ride upon as well as security against dangerous side-slipping. In Ajax - non - skid tires there is a large tire area in contact with the ground and the same

comfort that comes from a wrapped tread pneumatic. But, the instant that side-sway motion is set up, a neverending series of beveled-edged diamonds grips the roadway in successful protest and opposition to the tendency to skid. The revolving wheel, too, crowds air beneath the groove spaces of

the Ajax non-skid tread design. The weight of the car compresses the air thus confined into a powerful gripping suction and the course holds true.

In contrast are those other nonskid designs—a set of pegs or blocks built upwards and outwards from the tire tread. It isn't so much that these blocks soon wear down. The discomfort comes in the chattering, annoying vibration set up, robbing motoring of much of its pleasure.

Ajax non-skid tires are not alone safer to use and comfortable to ride upon, but the duration of the skid-

resisting efficiency is far greater. The wear comes on the *tread* which is built to take it.

Ajax tires have their quality inbuilt. There is not a lone pretension of quality. More important is our steadfast determination for quality, and the evidence of the confidence we feel in the tires we build is the

written guarantee of 5,000 miles. Measure this written, definite pledge of anticipated mileage against the verbally expressed implied life, 3,500 miles, of other standard makes. The difference is 1,500 miles, or 43%.

Get the extra service.

Decide now to equip with Ajax tires.

"While others are claiming Quality we are guaranteeing it"

### AJAX-GRIEB RUBBER COMPANY

1796 Broadway, New York

Branches in Leading Citles

Factories, Trenton, N. J.

es are not alone ifortable to ride ion of the skidisting efficiency ar greater. The iar comes on tread which is lt to take it.

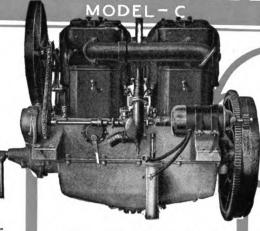
viax tires have ir quality int. There is not n e pretension quality. More ortant is our diast determion for quality, the evidence the confidence eel in the tires build is the f 5.000 miles. definite pledge e against the lied life, 3,500 d makes. The cs. or 43%.

ip with Ajax

PANY

### RUSHMORE STARTER

This is the Simplex Engine 4% x 6½ in.



A certain manufacturer has this engine:

Cylinders—Six Bore—4½ inches Stroke—5½ inches

The starter has double reduction gearing with a ratio 20 to 1, and weighs with gearing 85 pounds. The starter spins the engine at 75 r.p.m., taking 100 amperes from a 6 volt battery.

We put a Rushmore Starter, Model C, on the engine. It meshed di-

The Rushmore Starting and Lighting System has been adopted as factory equipment on the following cars:

Simplex Kline
Mercer Knox
Lancia Regal
Alco Crane
Stafford S & M

rectly with the flywheel gear, using a 10 to 1 ratio, and it weighed only 30 pounds.

Using 105 amperes at 5.25 volts, this Rushmore Starter spun that engine at

#### 115 r.p.m.

or 60 per cent faster than the starter regularly equipped. The saving in weight was 55 pounds. The saving in cost was equally worth while; and the Rushmore equipment had all the advantage in simplicity.

The Rushmore System is standard in America on:

Mercedes
DeDion-Bouton
Isotta Fraschini
Austrian Daimler
Delaunay-Belleville

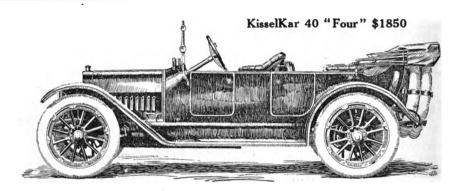
It spins yet bigger engines

The important point to remember is that the simplicity and low cost of the Rushmore Starter are incidental results of its scientific correctness of design-not "talking points" around which a catchpenny mechanism is built. The Rushmore Starter is simple because it goes straight to the heart of a correct engineering principle. More mechanism would result simply in a roundabout and inefficient method of accomplishing the result.

On closing the switch, the armature is "sucked" like a solenoid core into the working position with the pinion in mesh. When the engine starts, the higher speed "kills" the battery current and a spring instantly disengages the armature pinion. The whole action is automatic from the closing of the switch; there is no overrunning clutch, nor any intermediate gearing to waste power.

We make starters for the biggest engines on wheels.

RUSHMORE DYNAMO WORKS Plainfield, N.J.



### For profits and prestige connect up with the KisselKar

If you are the right man in the right locality and wish to handle a line that knows no seasons, this is your opportunity.

The KisselKar line is the largest in America, comprising three chasses and nine body models in pleasure cars, and six chassis models in commercial wagons and trucks.

It is open to you if you are in unallotted territory and can show a clean record of salesmanship, integrity and good standing.

We want dealers who are willing and ready to get out "on the firing line" every day in the year, for there is work to be done on every working day when you handle KisselKars.

### KISSELKAR

With this line you can "cash your ability" to the fullest, for every one that wants to pay more than \$1,500 for a pleasure car and every man in business where delivery is a feature, is a prospect.

And when you talk KisselKars or KisselKar Trucks you are talking about an established line that is known from sea to sea and from the Gulf to Alaska—cars that have thoroughly made good in actual duty and are up-to-the-minute in every respect. A line, nationally advertised, with a complete organization, ideal manufacturing facilities and a reputation among dealers for extending the most thorough, thoughtful and helpful cooperation. All this is assured to you as representative of the KisselKar.

There is a big advantage in being connected with a concern of international prestige and unquestioned financial standing, with an unsullied record in the production of good cars—sound, permanent and of high repute. The time is now opportune to make your connection with the Kissel Motor Car Company.

KisselKar 60 "Six" touring, \$3150; 48 "Six," \$2350; 40 "Four," \$1850. Runabout, Sedan, Berline and Limousine bodies. TRUCKS—1500 lbs., 1, 1½, 2½, 3½ and 6 tons capacity.

#### Kissel Motor Car Company, 159 Kissel Ave., Hartford, Wis.

New York, Minneapolia, Chicago. Philadelphia, Milwaukee, Los Angeles, San Francisco, Oakland, Dallas, Boston, St. Paul, Kansas City, Buffalo, St. Louis, Omaha, Seattle, and over 300 other leading points.

### Mosler

## Vesuvius Plug





Absolutely Gas Tight

Has No Equal

For Speed and Power

Can Be Taken Apart Easily

And Reassembled

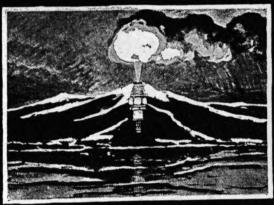
Absolutely Gas Tight

The Stone-Insulated Plug

Par Excellence

Will Outlast Your Motor

Made to fit any Engine, any Thread



AS POWERFUL AND AS INDESTRUCTIBLE AS THE FIRES OF VESUVIUS

#### Free! To Dealers:-

Picture of Vesuvius Transfer Sign Write for Colored Window Display It will help you sell the best plug

#### Millions of Points!

NO RESISTANCE—Why buy imitations with a limited number of sparking points when you can get the Original, Genuine Vesuvius construction at practically the same price or a trifle more?

Plugs backed by reputation of fifteen years in business.

A.R.MEYENGA. WILTUITEWAY

031



Lowered into a sound-proof room, closed in with eight-inch walls and hatches fastened down, a Continental Motor undergoes the final examination. It is the silence-test, under extreme working conditions, gauged by a dynamometer. No faintest defect-revealing noise can possibly escape. The motor must prove itself a perfect mechanism.

### <u>Continental</u> <u>Motors</u>

Silent motors are saving motors, in power and in upkeep. More,—silence certifies a total elimination of friction, and an amazing exactness of machining down to the ten-thousandth of an inch, which insures for the motor a life of many years of satisfactory service.

Over 80,000 drivers are loud in the praise of the silent Continental; and this year 40,000 more Continentals will go into service, in 92 makes of cars—pleasure cars in fact as well as name, and commercial cars which bring their owners steady profits.

From 11 to 60 horse power—there is a Continental in at least one leading make of every class of motor vehicle. No matter what the requirement, there is a Continental-equipped car to meet it.

Continental Motor Mfg. Co.

Largest Exclusive Motor Builders in the World.

Detroit

Michigan



February

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### Centrifugal? Gyroscopical? What Next?

THE Magnetic Speedometer has always been and always will be the magnetic speedometer.

Other speedometers come and go. First they bob up as the centrifugal; then in a frantic effort to conceal that obsolete principle of operation they are suddenly named the gyroscopical; next, and as out of a clear sky, they again flop back and return to us as the centrifugal. Change follows change, all in a vain effort to stop the ever increasing demand for the



The Popular Speedometer

The Stewart magnetic speedometer is still, as it always has been, the choice of every discriminating automobile manufacturer.

Today 95% of all car producers use the magnetic type speedometer. They concede all other types obsolete.

You can have a Stewart on the car you buy if you insist on it.

#### **Stewart-Warner Speedometer Corporation**

Factories: Chicago, Ill., and Beloit, Wis.

**Direct Factory Branches** 

Atlanta, Ga. Boston, Mass. Buffalo, N. Y.

Chicago, Ill. Cleveland, Ohio Detroit, Mich. London Indianapolis, Ind. Kansas City, Mo. Los Angeles, Cal. Minneapolis, Minn. New York, N. Y. Philadelphia, Pa. Paris Pittsburgh, Pa. St. Louis, Mo. San Francisco, Cal.

And upwards of 100 Service Stations



"As Sure as the Whirl of the World"

A Trade Mark that stands for quality in Motor Car Electrical
Apparatus the World over

### UTO=LITE

Starting

#### Lighting

**ELECTRICAL SYSTEMS** 

Ignition

THE electrical instruments manufactured by the Electric Auto-Lite Company of Toledo, Ohio, U. S. A. for use on motor cars have been developed by patient and careful study of the unusual conditions under which such apparatus

must work.

The pioneer makers of the 6 volt electric system, this company has had the requisite experience and possesses the engineering knowledge required to not only eliminate trouble-someand inefficient points of design but also to anticipate progressive improvements which have

kept the product slightly in advance of other systems of this kind. The 1914 instruments are therefore wonderfully efficient.

Capable, compact, and substantial, they are fully protected from deteriorating influences, such as water, gresse, and dirt and will be found to be admirably adapted for the work for which they were designed. Three of the instruments are shown, the starting motor, two model G generators, one equipped for light-

ing alone, the other combining lighting and ignition. The complete installation in the center of the page shows one method of attachment. Auto-Lite instruments, however, can be adapted to practically every existing type of motor car and will operate successfully in almost every position.

#### THE AUTO-LITE STARTING MOTOR

8 inches in length, 5½ inches in width, will crank the largest six cylinder engines at a speed of over 100 revolutions per minute on less than 100 amperes of current.

Can be attached to any automobile engine in either a horisontal or vertical position.

Compactly enclosed in cast iron case, dust and water proof.

#### THE AUTO-LITE LIGHTING GENERATOR

Made in two types—S.R. 4 and V.R. 4—as shown. Runs at engine speed, directly connected to pump or magneto shafts, so chains, sprockets or gears required. Reaches its maximum output of about twelve amperes at car speed of about eighteen miles per hour. Begins to produce current at six miles per hour.

Operates at 6 volts—weighs 273 lbs.

V. R. 4 is fitted with standard distributor and timer, and by its use the magneto is discarded and generator placed on its bracket.
This generator produces sufficient current to keep 120-ampere hour better always charged for starting, lighting and ignition.



Model G Generator Type S.R. 4

#### The Electric Auto-Lite Co.

"The Pioneer Makers of the 6-volt electric system"

TOLEDO, OHIO, U. S. A.

ber York D.

Detroit

Kansas City

San Francisco

Our engineering department is at your service. Complete technical literature sent on request. Correspondence solicited.



Model G Genera Type V.R. 6

(234)

### Talk with the Repair Man

We wouldn't dare ask you to go to the *repair man* for information about Timken Bearings and Axles—if we didn't know that the bearings and axles stand back of us.

It would be easy for us to print flattering testimonials of our products—any manufacturer can do that. If he didn't have *some* enthusiastic customers he wouldn't be in business.

So we ask you to get the evidence yourself.

We ask you to talk with the one man who is most apt to look on the dark side, the one man who sees motor cars at their worst, the exclusive repair man, who knows all makes of cars but has the selling agency for none.

Ask him—wherever you find him—what he thinks of Timken Axles and Bearings.

He knows that any moving part of anything will wear in time—that the goal of the builder is to put off the day of that wear, to correct it in the shortest time, at the least expense—without loss of power and efficiency, without waste of gasoline, without annoyance, discomfort and delay.

He knows which parts of the motor car get the hardest usage, which are apt to wear out quickest, which are easiest to get at, which give the most trouble or the least trouble.

Ask him how Timken Tapered Roller Bearings stand up under heavy loads and hard service—up hill and down dale, on the smooth highways and the rough-rutted by-ways.

Ask him in what places in the car you are most apt to find Timken Bearings, and why. There's a vast difference, you know, between the light-duty bearing on a fan-shaft and the bearing that's good enough to take concentrated hammering, thumping and general shaking up on the front axle spindle.

Then ask him how he finds the Timken-Detroit Rear Axle when the car rolls into the garage. Is it sturdy? Is it simple in design? Are its parts so accessible that adjustments and repairs, if necessary, can be quickly and economically made? Ask him if Timken Axles withstand the occasional "accident" surprisingly well.

If your repair man shows you a fault in Timken design or workmanship you can't do us greater favor than to tell us. The Timken organizations to a man are keen to discover and correct even the slightest errors. The man who points them out is our best friend.

We have a notion that you can't go to a better booster for Timken Bearings and Axles than this same practical, hard-headed repair man. But we won't put words into his mouth.

For your own direct information and benefit take the next opportunity to talk with the repair man.

Afterward, when you want to know more of the mechanics of bearings and axles write for the Timken Primers T-3 "On the Care and Character of Bearings" and T-4 "On the Anatomy of Automobile Axles." Sent free, postpaid, from either Timken Company.



THE TIMKEN ROLLER BEARING CO-CANTON, OHIO

THE TIMKEN-DETROIT AXLE CO. DETROIT, MICHIGAN



THE BEARINGS & AXLES

## Does the Public expect too much?

#### What should an engine starter be required to do?

Should it be operated without manual gear-shifting, by the simple pressing of a button, or is further manipulation acceptable?

Should it simply turn the engine over, trusting to a hot spark, a good mixture, and (in winter) to noncongealing oils and hot water on the carburetor, to get the engine going at all?

Should it go a little further, and exert a maximum torque sufficient to overcome the resistance of cold stiff oil, thus limbering the engine by the heat of its own piston friction?

Should it go yet further, and eliminate the coldmixture problem? Should it spin the engine with such energy that the sudden heat of compression will vaporize the raw gasoline reaching the cylinders, thereby making the start practically instantaneous, no matter how cold the engine?

Finally, should the user be content merely to set the free engine going, or should he, if a quick getaway is desired, be able without injury to the battery, to

start the engine with the first speed gears in mesh, thus saving time and gear manipulation?

We submit that the public has a right to expect all it can get for its money. We hold that the most generally useful and adaptable starter will be the one ultimately preferred, regardless of any dogma as to its "proper sphere" of action.

The fact that an engine can be oiled by hand, cranked by hand, and its carburetor adjusted by hand, did not prevent men from devising automatic oilers, starters and carburetors.

Nor is the fact that an engine can be started under "favorable conditions" by an electric starter likely to prevent men from seeking to make the starter do as much more than that as possible.

A light or medium-sized car equipped with a Rushmore Starter, can be started from "dead" with the first speed gear in mesh, provided the mixture and spark are normally good; and this use of the starter entails absolutely no injurious consequences to either Starter or battery.

While not ordinarily important, ability to start in this manner may be valuable when quick action is demanded-as, for example, with the car stalled on a railroad track. And the ability of the starting equipment to respond to such a severe demand is not a bad test of its quality in lesser ways.

RUSHMORE DYNAMO WORKS

Plainfield, N. J.

Regal Engine quipped with ore Starter

The following cars are factory-equipped with the Rushmore Starting and Lighting System:

Simplex Knox Alco

Stafford

Crane Kline

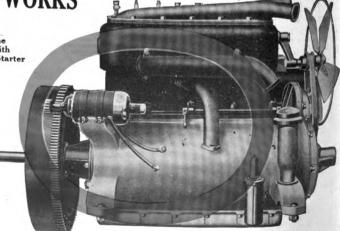
Multiplex S. & M.

The following cars are Rushmoreequipped in America:

De Dion-Bouton

Isotta Franchini

Austrian Daimler Delaunay-Belleville





Buick owners throughout the country have been using Hyatt Roiler Bearings in the axles of their cars since the first Buick car was built.

These "Quiet" Bearings have lengthened the life of the cars very materially by cushioning road shocks and absorbing the wracking vibrations. The hollow spiral roiler is just flexible enough to relieve the gears and shafts of excessive shocks and strains. Flexibility is an exclusive Hyatt feature.

Two books, one about motor car bearings in general for prospective purchasers, the other for automobile owners, will be sent on request

"Hyatt Quiet Bearings"



HYATT ROLLER BEARING CO.

### Motor Car Dealers! Motor Car Owners!

You Can Both Make Money With the

## Empire Gasoline Economizer

#### Dealers Read This

There are two ways for an automobile dealer to make

money.

First, to sell an article on which you make a substantial profit; and, second, to sell an article with which your customers will be pleased.

The first is the cash asset; the second, the good-will return.

You make a mighty good cash profit on the Empire Gasoline Economizer.

That profit is clear velvet, because it does not require increased selling expense.

And so far as the good-will feature is concerned read what one man said to our St. Louis dealer:

"I wish I could spend another \$10 with you and get the same amount of satisfaction."

Our big advertising campaign is bringing inquiries by the thousands.

We are selling 75 per cent. of them because we have a product the automobile owner wants; and needs.

And after he has used the Empire Economizer for thirty days he is anxious to tell his friends about it because it did more than we guaranteed.

In most big cities we have representatives.

Very soon we will be selling Empire Economizers all over the United States.

If you are a real automobile dealer and can put enthusiasm and integrity behind a live proposition you had bet-ter get in touch with us quickly; some one will be paid a profit in your city on Empire Economizers; it should be

#### Owners Read This

Read the guarantee below and see if you think we have confidence in our product.

We claim that this instrument will reduce your gasoline bill from 20 to 80 per cent.

That it will keep your spark plugs clean.

That it will keep carbon out of your cylinders.

That your motor will run better, freer and more efficiently.

And if the Empire Gasoline Economizer fails to satisfy you in any particular we don't want you to keep it.

The Empire Gasoline Economizer is attached to your manifold above the carburetor.

It holds back the too-rich mixture from the carburetor and mixes with it more air.

The Empire Gasoline Economizer can be attached to your car by any garage man in an hour.

You should not pay over \$2 to have it installed.

Remember the Empire Economizer is not only connected to your intake manifold but to your throttle.

It acts when you act; when you increase the speed of your motor you add more air.

Adding air causes the saving in gasoline bills. Send a ten dollar bill and your business card. You'll receive the instrument prepaid.

And remember, we are just as interested in having you send it back if you are not absolutely satisfied after a 30 or 60 day trial.

Be sure to mail the coupon.

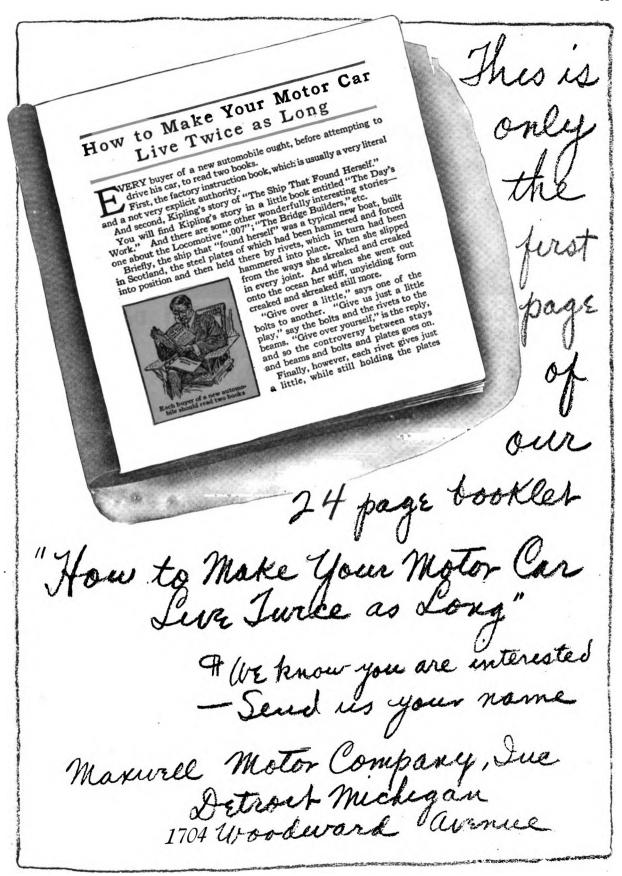
### Everybody Read This

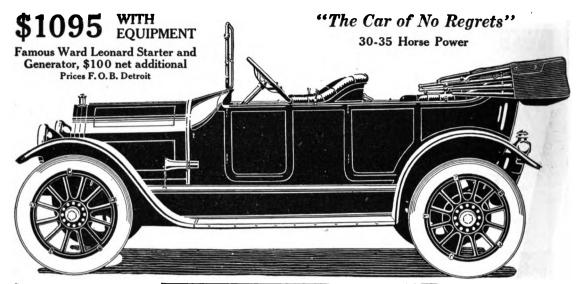
"When you buy an Empire Gasoline Economizer your absolute satisfaction is guaranteed. If at any time you are not entirely satisfied with its operation, you may return it to us, regardless of its condition, and we'll send you your money instantly. We do not wish to keep money that you'd rather not have given us."

#### THE BROWN-TAYLOR-GREENE CO., CHICAGO

1323-25 Michigan Avenue, South, Greer Building

Just what is your dealer proposition?  How much money can I make and how many must I sell?	You say you can save money on my gasoline bills. I would like to know how you will do it.
My name is	My name is
Address	Address
I sell	My car is
(State cars)	
Dealers	It has a
Fill in the proper blank and mail today	









Dark rich blue body with black and nickel trimmings



### When a dealer represents the KING he is selling the highest Motor Car Value in his community

Stand any other car, selling at \$1500, or under, alongside of the KING and go over both cars point by point. We know the KING will win because we know how our manufacturing and financial policies compare with others. We are prepared to prove the high merit and stability of our proposition to any prospective agent who in turn satisfies us as to his ability to properly represent our car.

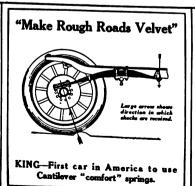
suspension; Gemmer steering gear; full floating Stewart-Warner speedometer; 112-inch wheel base; rear axle; Hyatt roller bearings; Briggs magneto; complete electric lighting; Goodyear tires.

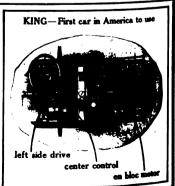
Long stroke motor; unit power plant; three-point | Stromberg carburetor; 18-inch steering wheel;

KING MOTOR CAR CO., 1300 to 1324 Jefferson Avenue, DETROIT, MICH. New York Agency and Showroom: Broadway at 52d Street New York Service Department: 244 to 252 West 54th Street



KING-1894-The first motor car operate on the streets of Detroit.





## Why 400,000 cars are equipped with the K PI

When 400,000 car owners choose this plug in preference to all others, there must be a reason! And here it is in a nutshell.

This is the only plug that can't short-circuit—because it is the only plug that is absolutely soot-proof.

It is impossible for soot to collect at the firing point, as the intense heat of the porcelain "petticoat" burns up the carbon as fast as it is formed. This is due to the fact that the "petticoat" extends to the end of the outer shell, where it is exposed to the heat of combustion.

We control the basic patents for this form of construction.

The porcelain used in this plug is not affected by sudden changes of temperature. It is made

of special clays tempered by a process of our own.

Millions of "J-M" (Mezger) Soot-Proof Plugs have been sold since they were put on the market over 12 years ago. Many that have been in use over 8 years are as good as new.

If any "J-M" (Mezger) Soot-Proof Plug fails to give satisfactory service we will supply a new one or refund purchase price. Price, \$1.00.

Write Nearest Branch for Booklet and Prices to Dealers

Boston Buffalo Charlotte Chicago Albany Atlanta Baltimore Birmingham

ľ

Cincinnati Dayton Galveston
Cleveland Denver Houghton
Columbus Detroit Houston
Dallas Duluth Indianapo

Galveston Houghton Houston Indianapolis Memphis New Orleans Pittsburgh Portland, Ore. Salt Lake City Toledo Rochester San Francisco Washington St. Louis St. Paul St.



### "WHITNEY" KEYS

#### "The Woodruff System of Keying"

"Whitney" Keys are packed in boxes containing 100 assorted sizes, selected especially for the benefit of the repair trade.

Every garage and repair man should have a box of these assorted keys on hand. They cost little and are very convenient. They may be purchased from the leading jobbers of automobile supplies or we can supply same promptly from the factory.

#### THE WHITNEY MFG. CO.

High Grade Driving Chains. Keys and Cutters for the Woodruff System of Keying Hand-Feed Milling Machines

## **Enduring Quality Proven**

The persistent, constant and strenuous stresses of race track speed prove the superiority of New Departure Ball

Bearings.

Thirty-nine winnings, twenty-six seconds and eleven thirds, over a total of twenty-eight other motor cars, including foreign racing models, is the story of the New Departure equipped Mason Car the past season.

The American-made New Departure is guaranteed. Literature on request. Special Cyclecar data will be sent

if you are interested.

#### The New Departure Manufacturing Company

Bristol, Connecticut

Western Branch: 1016-17 Ford Building, Detroit, Michigan

## Confidential to Automobile Manufacturers

Getting right down to "brass tacks" and talking man to man isn't it true that the CLUTCH is the one point of contact between the driver and your car?

That being so, isn't the continued good behavior of the CLUTCH a matter of prime importance? You want the CLUTCH right in the first place and you want it to stay right.

You are naturally anxious that the CLUTCH should say good things to those who drive your cars; what are you doing to make sure of it?

We respectfully suggest that the services of CLUTCH SPECIALISTS would be extremely worth while. KONIGSLOW-CLEVELAND will gladly have you make use of their experience and facilities.

Don't wait till you're ready to place orders—write today.

THE OTTO KONIGSLOW MFG. CO. Cleveland



















#### First and Still the Best

The following New and Exclusive MECHANICAL FEATURES

are on the McCaskey Register Only;

THE EXPANSION FEATURE — Alphabetical, Numerical and Interchangeable Index ELECTRIC RECORDER — Duplex Section containing Accounts Payable under lock and key KWIKFIND NON-SLAM LEAVES. Daily Trade Builder

INDESTRUCTIBLE PATENTED LEAF HINGES









More Than 100,000 Merchants will tell you the McCaskey System is only One Writing. Prevents Disputes and Forgotten Charges. Every Account Totalled and Forwarded with each purchase. Is an Automatic Collector. Limits Credit automatically. Abolishes Bookkeeping—Night and Sunday Work—Posting and Worry. A POSTAL WILL TELL YOU MORE



BRANCHES: New York, Chicago, Boston, Washington, Pittsburgh, Memphis, Atlanta, Kansas City, San Francisco, Cincinnati; Dominion Register Company, Ltd., Toronto, Canada; Manchester, England. The largest manufacturers of carbon coated salesbooks in the world





















#### The Part That Sells The Car

As the Automobile becomes an "old story" the buyers' knowledge of its mechanism increases. Today the average buyer of a motor vehicle is more or less an expert. He may be particular about the body and trimmings, but he also insists on being shown the "works." It is partly because of this, and partly because manufacturers are gladly recognizing proven merit, that the demand for the BUDA MOTOR grows and grows and grows and grows.

## The Unequalled Buda Six

is being adopted by the manufacturers of some famous fours who are now adding the six to their lines, because The Buda Six, Models "SS-3" and "SS-U" have no superiors in the whole automobile field, no matter what the price. Both scientific and practical tests will prove this for any interested manufacturer.

THE BUDA COMPANY

FACTORY, HARVEY, ILL., (Chicago Suburb) Address

BRANDENBURG & COMPANY, 1108 S. MICHIGAN AVENUE, CHICAGO
57th and Broadway, New York

Ford Building, Detroit



#### Now Is the Time to Equip YOUR Car

The Pyrene Extinguisher is convenient in size, has the maximum of efficiency, is easily operated, presents a handsome appearance, and Pyrene brass and nickel-plated extinguishers are the only types that qualify to

plated extinguishers are the only types that qualify to pay part of your insurance.

Once knowing the value and true economy of the Pyrene Extinguisher, every careful motorist will make it a standard part of his car's equipment—because Pyrene protects his life as well as his investment—provides safety for his garage, and obtains for him a substantial insurance reduction.

For reduction in fire insurance rate, consult agents of The Aetna Accident and Liability Co., and the Automobile Insurance Co. of Hartford, Conn.—or ask your own broker.

Write for booklet—proving the economy, efficiency and supremacy of Pyrene—Send postal today to nearest branch office.

Brass and Nickel-plated Pyrene Fire Extinguishers are the only one-quart fire extinguishers included in the list of approved Fire Appliances Issued by the National Board of Fire Underwriters.

#### Pyrene Manufacturing Co., 1358 Broadway, New York

Alton Atlanta Baltimore Bridgeport Boston Buffalo Chicago

Cincinnati Cleveland Dayton Denver Detroit Duluth Jacksonville

Louisville Memphis Milwaukee New Orleans Norfolk Oklahoma City Phoenix

Philadelphia Pittsburgh Richmond St. Louis St. Paul Salt Lake City San Antonio York, Neb.

Pacific Coast Distributore: TGorham Fire Apparatus Co.
Sar. Francisco Los Angeles

Distributors for Great Britain and the Continent:
The Pyrene Co., 29A Charing Cross Road, London, W. C.

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The logic of advertising to the dealer first, most and all the time, has been the foundation of nearly every successful advertising campaign conducted in the automobile business

The dealer is a wholesale buyer, either directly or indirectly, of ever meritorious product.

The dealer is more potent in moulding public opinion as to complete cars or accessories than any other individual in the industry.

Motor World Is the Dealer's Favorite Trade Paper

#### **Motor World Publishing Company**

1600 BROADWAY, NEW YORK

W. H. TRIPP, Western Adv. Mgr. 1001 Ford Bldg., Detroit B. MATHEWSON, Adv. Mgr. 1600 Broadway, New York

#### This Name Is Your Guarantee



This name on an automobile lamp is your guarantee that it is the most satisfactory and efficient lamp it is possible to make.

Back of it, is the largest manufacturer of electrical material in the world.

Behind this label also, are many years of expert research and experience by the pioneers in the development of automobile lamps.

## EDISON MAZDA Automobile Lamps

They are backed by MAZDA Service

The label below and the trade mark stands back of our lamp engineers, who, co-operating closely with the makers of lighting systems and car builders, have produced the most successful and reliable lamp for all conditions of automobile service—the EDISON MAZDA.

This is the incandescent lamp to ask for always, when purchasing from any automobile supply house, electrical dealer or garage. "Be sure the lamps you buy bear the name EDISON."

## EDISON LAMP WORKS OF GENERAL ELECTRIC COMPANY General Sales Office Harrison, New Jersey.





#### The Motokart Is Not A Cyclecar

in the generally accepted meaning, it is NOT a miniature pleasure car converted to commercial usage. It WAS the first smaller than standard four wheel parcel delivery wagon built in the United States: TI IS STILL the only car of its type built exclusively for commercial purposes. A chassis ideal for pleasure usage can never successfully be made the basis for a delivery car, the difference in requirements is too radical. We know nothing about pleasure cycle-cars, but have devoted ourselves exclusively to the purpose of producing the best possible parcel delivery car at a price within every storkeeper's reach—\$400.00. Let us tell you how well we have succeeded.

#### Tarrytown Motor Car Co., Inc.

Factory: General Offices:
Tarrytown, N. Y. 1790 Broadway, New York City

Agents wanted in all unoccupied territory

## IF YOU ARE INTERESTED

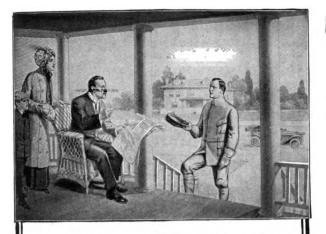
### MOTORCYCLES

THE BICYCLING WORLD AND MOTORCYCLE REVIEW

WILL INTEREST YOU.

PUBLISHED EVERY TUESDAY AT 1600 BROADWAY, NEW YORK

TWO DOLLARS PER YEAR SPECIMEN COPIES GRATIS



## Get Weed Tire Chains at Once!

"I know you are a careful driver, but it is best to adopt every device to prevent accidents.

"I can't afford to take any chances. We have all foolishly depended on rubber alone long enough. It's time to awake to our responsibility. So go at once and buy a complete equipment of Weed Chains and never start out without them when the roads or pavements are slippery or greasy."

## Weed Anti-Skid Chains

Insure Against Anxious Moments



Probably no other device has done so much to raise the factor of automobile safety as WEED CHAINS. They are the proverbial "ounce of prevention" against skidding, the cause of over ninety per cent of all automobile accidents—Life Insurance and Accident Insurance Companies strongly endorse them and recommend their use. Taxicab Companies, for their

own protection, insist that their drivers put them on when the streets are wet or slippery.

#### **Increasing Demand**

for WEED CHAINS makes them the **most profitable** Automobile Accessory handled by Dealers—Quick and Steady Sales—No Dull Seasons—No Dead Stock—Easily Handled—Liberal Profits—Universal Satisfaction.

Attractive, convincing, decorative, lithographed hangers supplied to dealers upon request.

At all dealers selling Auto Supplies

Weed Chain Tire Grip Company 28 Moore Street, New York, N. Y.

Manufactured for Canada by Dominion Chain Company, Limited; Main Office, Suite 801 Shaughnessy Bidg., Montreal, Canada



## On the Way to Two Million

The demand for Bosch Magnetos is such that within a remarkably few years it has been necessary to greatly increase manufacturing schedules. The Bosch Factories are well on the way to supplying the two millionth magneto.

## The Bosch Magneto

remains the one perfectly reliable ignition source and as such it is universally recognized.

It is so well made, so carefully designed that its regularity can be depended upon under all conditions.

SPECIFY BOSCH AND BE SATISFIED CORRESPONDENCE INVITED

Bosch Magneto Co., 224 W. 46th St., New York

## Look to your Tires

YOU can take a thousand miles of service out of a set of tires by driving them insufficiently inflated over ten miles of road.

## The New Positive Lock Stop Twitchell Air Gauge

Insures you against premature wearing out of tires.

It is TIRE INSURANCE FOR ONE DOLLAR



For Sale by Jobbers, Dealers, Garages or

The Twitchell Gauge Company
1202 Michigan Avenue CHICAGO

Space

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Motor World

Henry 5, 1914

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"I" To "I" Ro "I" To ho

Coupe.

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1254 Mi



Сору contributed by Russel M. Seeds Advertising Agency, Indianapolis.

#### **Better and Cheaper Living** Will Come to All Through the Lincoln Highway.

The isolation of the farm means these things:

1.—Congestion and pauperism in the cities because people desert
the farms and overcrowd the towns.

2.—High cost of living, because owners of farms find it hard to
get help and costly to get their products to market.

3.—Leas purchasing power among the people and less prosperity
for merchants and manufacturers.

This isolation is due to one cause—Bad Roads.
Good roads mean more to every American, whether he lives in
town or country, than any other reform.

The greatest object lesson in good roads all over America will
be

#### The Lincoln Highway

It will be built by the voluntary contributions of the people. Will YOU give \$5 to see it through. Just address

The Lincoln Highway Association Detroit, Michigan

## Ignition Service

It Doesn't Matter what brand of ignition your automobile is equipped with-SPLITDORF SER-VICE is AT YOUR COMMAND. The whole SPLITDORF organization is YOUR FRIEND -we want EVERY user of a hydro-carbon engine to be OUR FRIEND. We'll leave no stone unturned to bind the friendship with TRUE SERVICE.

Call upon our nearest Branch Manager if you have ignition troubles-he'll advise and help you without delay. He's there for the purposeyou can depend upon him treating you right.

#### SPLITDORF ELECTRICAL COMPANY

TLANTA, 10-12 E. Harris St.
OSTON, 180-182 Mass. Ave.
HICAGO, 64-72 E. 14th St.
ETROIT, 972 Woodward Ave.
ANSAS CITY, 1823 Grand Ave.
OS ANGELES, 1226 S. Olive St.
EWARK, 290 Halsey St.

NEW YORK, 18-20 West 63rd St.
PHILADELPHIA, 210-212 N.
13th St.
SAN FRANCISCO, 1028 Geary St.
SEATTLE, 1628 Broadway.
SEATTLE, 1628 Broadway.
FACTORY: NEWARK. N. J.



### Billings & Spencer

trademarked drop forged tools and forgings measure up in all respects to the highest stand-

By automobilists, motorcyclists and manufacturers they are found to be the products that give maximum service.

The ktrademark - the trademark of the pioneers in the drop-forging field—is an assurance of standard quality.

Blue prints receive immediate attention. Prompt shipments.

Catalogs on Request

The Billings & Spencer Co. HARTFORD, CONN.



**Perfect Carbon** Remover \$10

Will remove ALL carbon from cylinders. Easily and in few minutes. Equal of any high-priced outfit. All parts guaranteed. Keeps up efficiency of cars and trucks. BIG MONEY MAKER for garages.

Price \$10 (Without Oxygen Tank)

Usual price \$15. As we sell for cash only and no accounts carried, customers are given take no chances. Sent prepaid—cash with order or C. O. D. OXYGEN DECARBONIZER COMPANY, 301 RIVER ST.

### Metal Products Axles

have been used for years in several well known makes and exclusively in two of the most popular cars on the market.

Built in standard types and to specifications. Deliveries as you want them.

Let us quote you prices on your 1914 contracts.

METAL PRODUCTS COMPANY DETROIT, MICH.



#### THE APPLE ELECTRIC COMPANY 64 Canal St., Dayton, Ohio

**Electrical Equipment** 

Electric Lighting and Starting Systems for Automobiles

Electric Lighting and Starting Systems for Motor Boats.

Boats.

Electric Lighting and Starting Systems for Motor Trucks and Tractors.

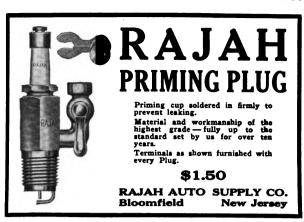
Electric House Lighting Outfits.

Golden Glow Headlights.

The Famous Apelco Storage Batteries.

Write for Bulletins

THE APPLE ELECTRIC COMPANY, 64 Canal St., Dayton, Obio



More Power \$2400 More Flexibility More Economy Completely Equipped More Silence Four-cylinder Bosch ignition, five-passenger, Wagner electric 50 horsepower. starting and light-128-in. wheelbase. ing, \$2400. The car of the future will not have poppet valves Moline Automobile Co., East Moline, Ill.

### RUTENBER

Manufactured since 1901 for high grade

#### **AUTOMOBILES** and TRUCKS

16 x 5½ four and six nder, 4½ x 5½ four six cylinder Stand-or Unit, and 4 x x, x 5 and 4½ x 5 ndard Types. All L d 4 Cycle. or

The Rutenber Motor Co. MARION, INDIANA



All prices F. O. B. Detroit HUPP MOTOR CAR COMPANY 1254 Milwaukee Avenue Detroit, Mich. For Axles that "Stand Up" and satisfy on every point, specify



**Automobile Axles** 

LEWIS SPRING & AXLE CO., Jackson, Mich.



RDYKE & MARMON CO. INDIANAPOLIS (ESTABLISHED 1851) INDIANA



#### Shock Absorber

Only spring shock absorber made that is adjustable to any load. Slight turn of your wrist tightens or releases tension of shock absorbers to changes in weight of load. Easy to operate. Adjustments made in a minute's time. Remains in same position until changed.

The Coxajusto is a real shock absorber. Secures genuine comfort in riding and a saving of wear and tear on your car and tires. It will pay you to send for full information.

COX BRASS MANUFACTURING CO., ALBANY. Branches: 1777 Broadway, N. Y. (1tv., 3445 Michigan Ave. Chicago, III 870 Woodward Ave., Detroit, Mich., 1216 Van Ness Ave., San Francisco





The best car value in the market and a 10% greater net profit for the dealer are the two big inducements we offer live aggressive direct agencies. Write today.

ABBOTT MOTOR COMPANY

Detroit



Michigan U. S. A.



Send for Pleasure or Commercial Catalogue

KNOX AUTO COMPANY SPRINGFIELD, MASS.



With Full Equipment, f.o.b. Detroit

FORD MOTOR COMPANY
Detroit, Michigan



### The Standardized Car

The car that started the stampede to standardization

A Cole franchise is a valuable asset to any dealer. Find out about it.



Cole Motor Car Co. of Indiana







#### GEARLESS

A big, strong, powerful car, having all those refinements and up-to-date features that make the Cartercar a continual source of pride and satisfaction to the owner.

The Cartercar Gearless Transmission insures the utmost ease in handling with no jerking or jarring clutch and clashing or stripping of gears.

Rulls in parious hade to the 21700 21700 22000

Built in various body types \$1250—\$1700—\$2000 CARTERCAR COMPANY, Pontiac, Michigan



#### The Atwater Kent Ford Ignition

assures perfect synchronisation at all speeds; eliminating preignition and overheating—starts easily with a quarter turn of the crank and frequently without cranking by means of the starting button on the coil. It will, in addition, wonderfully increase the power, speed, flexibility and hill-climbing ability of the Ford car and is easily installed without any necessary machine work.

Write for Booklet

ATWATER FINI MFG WORKS
4940 Stenton Ave., Philadelphia



### The New Process Gear Corporation

Out Gears of Quality Complete Differentials



The New Process Gear Corporation











This name on Automobile Tires and Rubber Accessories signifies inherent qualities of material and workmanship that insure the maximum of service at the minimum of expense.

THE GOODYEAR TIRE & RUBBER CO.
AKRON, OHIO

(673)

## Quick Detachable and Demountable Rims

Our new and improved manufacturing facilities insure quality products and prompt deliveries in large or small quantities.

Jackson Rim Company
Jackson, Mich.

## Any Kind Rind Clincher Every Kind Ring Q. D. Stock, or to Blue Print Ring Channels

For Automobiles, Motor Trucks, Aeropianes, Motorcycles, Bicycles.

We Also Make Axles and Hubs.

MOTT WHEEL WORKS, Utica, N. Y. R. B. ABBOTT SALES CO., Sales Agents, Detroit

## Triplex Engine Starter For Ford Cars

Mechanical, durable, simple and efficient. 100 per cent. uninterrupted service from the time it is attached.

Write for particulars regarding dealer arrangements.

UNIVERSAL MANUFACTURING CO.
RACINE, WIS.





Emil Grossman M'I'g Co., Inc.

Bush Terminal Building No. 20

Brooklyn, (New York City)

U. S. A.

U.S.PAT. OFFICE Detroit, 844 Woodward Are, Detroit, Mich.

Magneto Plugs coax the maximum power out of the engine





## AUTO=TOP FABRICS OF EVERY DESCRIPTION Samples and Prices on Request L. J. MUTTY COMPANY, Boston

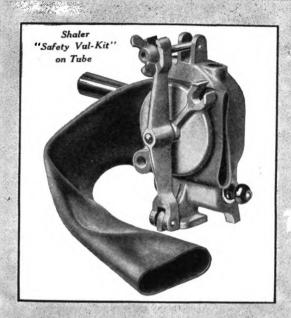
#### Prest-O-Lite

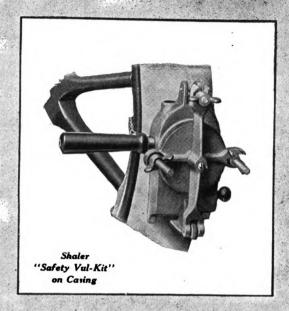
is the most CONVENIENT

Lighting System

All the facts on all lighting systems mailed you on request.

The Prest-O-Lite Co., Inc., INDIANAPOLIS, IND.
(Contributor to the Lincoln Highway)





The Accessory Sensation of the Year!

SHALER 550 SAFETY VULKIT CONTINUE CONTI

Saves Tires-Saves Repair Bills-Can be Carried in Tool Box

At last—after months of experiments and tests we have finally perfected a Shaler Vulcanizer for repairing tubes and casings, that can be carried in the tool box and can be operated anywhere at any time. We now announce the "Shaler Safety Vul-Kit" at \$3.50—the lowest priced—really efficient Vulcanizer made today.

#### No Burning Flame-No Danger of Fire If Accidentally Upset

No watching, no regulating; simply fill the cut or puncture with new rubber, clamp on the Vulcanizer — fill and light the generator. The fuel supply is limited to that required for perfect vulcanization. No more — no less. You can't overcure or undercure.

Tubes are clamped against the vulcanizing surface by a swivelled plate inlaid with asbestos to retain the heat and prevent pinching the tube. You can't accidentally spoil a repair or tube by clamping one side of the plate tighter than the other. Handle, always cool, permits removing Vulcanizer from tire as soon as repair is finished. Anybody can use it. Furnished complete with repair material—everything but the fuel. Fully nickeled—will last a lifetime.

#### FREE-Book on "Care and Repair of Tires"

Contains valuable tire information that every motorist should know and it explains all about tire troubles and their causes — how to care for tires—and hints on how to get more mileage. The leading American and Foreign Automobile Journals quote this book as an authority. We will send a copy free on request—together with full particulars about the Shaler Safety Vul-Kit at \$3.50.

The C. A. Shaler Company, 405 Fourth St., Waupun, Wis. Canadian Distributors, John Millen & Son, Ltd., Toronto, Winnipeg, Montreal, Vancouver

## The Shaler Line Is Complete

We are the world's largest Manufacturers. We make Vulcanizers of every ye—electric—gasoline—alcohol and steam. The Shaler is the standard used in the best garages and repair shops everywhere. The Shaler line complete from this new Safety Vul-Kit for the home garage to complete garage equipment.

## For Sale — Wants — Exchange

WELDING Plant, Cutting Plant, Carbon Removing Outfit, or a combination of all of these at from \$15.00 to \$175.00 for high or low pressure system. For full particulars address BERMO WELDING APPARATUS CO., Omaha, Neb.

PEERLESS CUSHION DRESSING.

Brightens and renews all leather seats and cushions. Will not wash or rub off. Dries in twenty minutes. THE COLUMBUS VARNISH CO., Columbus, Ohio.

AUTOMOBILE MAILING LISTS
14,425 Dealers and Agents\$15.00
22,500 Garages and Repairs 20.00
2,050 Liveries and Taxi Co.'s 7.50
4,940 Supply Dealers 7.50
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Neatly typewritten; guaranteed 1914
compilation; 5,000 others every trade.
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FORD OWNERS—We can make your car the easiest rider made with light or heavy load; no jolts, no jars, no uptrow. Write us. THOMAS AUXILIARY SPRING CO., Canisteo, N. Y.

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cars, parts and appliances and where help or
situations may be secured at a nominal cost.

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Makes old, faded, water and grease stained tops look like new. Water-proofs leaking mohair, duck and canvas. Leaves the cloth soft and pliable. THE COLUMBUS VARNISH CO., Columbus, Ohio.

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Owners or dealers; any state, county or city; weekly and monthly supplements at lowest prices. Special lists of Electrics, Trucks, Fords, Studebakers, Overlands etc.

lands, etc.
MOTOR LIST CO. OF AMERICA.
230 News Arcade, Des Moines, Iowa.

RACING BODIES—We make them to fit any car. Seats, special and stock sizes; Radiators, Hoods, Tanks and Fenders. AUTO SHEET METAL WKS, 1530 S., Michigan Ave., Chicago, Ill.

PEERLESS LEATHER TOP DRESSING.

DRESSING.

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PORD Racing Type Bodies, we build them in several models. Also Hoods. Seats, Tanks and Fenders. AUTO SHEET METAL WORKS, 1530 S. Michigan Ave., Chicago, Ill.

These columns offer you an opportunity to appeal to an audience of 8,000 readers whose merchandising taste is being cultivated weekly to the highest degree by our articles on "Wide Awake Merchandising."

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Every Thursday, at 3 o'clock P. M.

In Sales Arenas, 139-151 East 24th St.

Cars of both the pleasure and business types will be accepted the day prior to sale for exhibition in the NEW, WELL LIGHTED, SPECIALLY DESIGNED ARENA adjoining regular sales ring and will be offered for disposal on the day designated

To the Highest Bidders, Without Reserve A UNIFORM RATE OF

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An Unusual Opportunity to Buy or Sell

EITHER A USED OR NEW CAR FOR ANY PURPOSE.

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ill help you increase your business while benefitting your customers. We will send any responsible dealer a pair on 30 days' trial. Write new. Good Agents wanted for unoccupied territory.

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Screwed in spark plug hole. ONLY 5 INCHES HIGH. Metal piston rings, handle, noiseless. Guaranteed equal to any \$15 pump on the market. Dealers write for full information and discounts. Without gauge, \$8.50, with gauge, \$9.50

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THE NATIONAL MOTOR SUPPLY CO., 5608 Euclid Avenue, Cleveland, Ohio

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is exceedingly easy-riding and comfortable. The straight line low slung as exoccungly easy-riding and comfortable. The straight line low alung body, deep upholstery and luxurious appointments of the Sturdy STUTZ give it that aristocratic design which lends dignity and quality to a high class motor car. Write today for advance booklet A-15 Sturdy STUTZ Announcement.

STUTZ MOTOR CAR COMPANY, Indianapolis, Ind.

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"The Speedometer of Absolute Accuracy" Write for Catalog

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THE AMERICAN HARDWARE CORPORATION, Successors
New Britain, Conn., U. S. A.
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For anything in sheet metal that goes onto an automobile ask the

#### HAYES MANUFACTURING COMPANY

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Largest Users of Sheet Metal in the World

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Famous For Their Durability

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TO-DAY

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Stand Alone in a Class by Themselves

United States Tire Company, New York



CLEVELAND, OHIO



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METZ COMPANY, Waltham, Mass., U. S. A.

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Now standard on fourteen makes of America's leading cars and still growing. Send for blue-prints and specifications—or consult our engineering department.

HESS SPRING AND AXLE COMPANY CARTHAGE, OHIO



Hess-Bright at Night

## HESS-BRIGHT



BALL BEARINGS like men have their allotted span of life. In a man life is determined by constitution -- health. In a ball bearing it is determined by construction -- the quality of steel and accuracy of manufacture. HESS-BRIGHT BALL BEARINGS like healthy men give top-notch service.

The HESS-BRIGHT MANUFACTURING CO.

FRONT ST AND ERIE AVE. PHILADELPHIA PA

STORES FOR RETAIL DISTRIBUTION
Philadelphia 666 N. Broad St - New York 1974 Broadway - Chicago 1800 Michigan Ave.





## Fulfillment

When we put the Klaxon name on a warning signal, we enter into a contract with the ultimate owner of that signal. We contract to give him complete satisfaction—INDEFINITELY. There is no time limit in the Klaxon guarantee.

We want him not only satisfied — but ENTHUSIASTIC: and to this end stand ready and willing to go to any expense or trouble.

If he ever has difficulty with his Klaxon—if it ever fails to operate as it should operate—if, for ANY reason, he is displeased—we stand ready—and GLAD—to overcome the difficulty—to do it promptly and completely.

Cheap signals—especially the cheap "buzzers" with which the market is flooded—continually cause trouble. This you know.

At the price for which they are sold there is no room to give service.

If they go wrong — as they always do—they are a total loss.

No one is responsible—no one can be responsible at the price for which they are sold.

We believe it is better to sell a man permanent satisfaction and make him a booster—than to save him a few dollars and make him a kicker.

Klaxon owners are satisfied owners. To make them so and to KEEP them so is the first obligation of this Company.



Lovell-McConnell Mfg Company Newark, N.J., U.S.A.

KLAXON

"The Public Safety Signal"



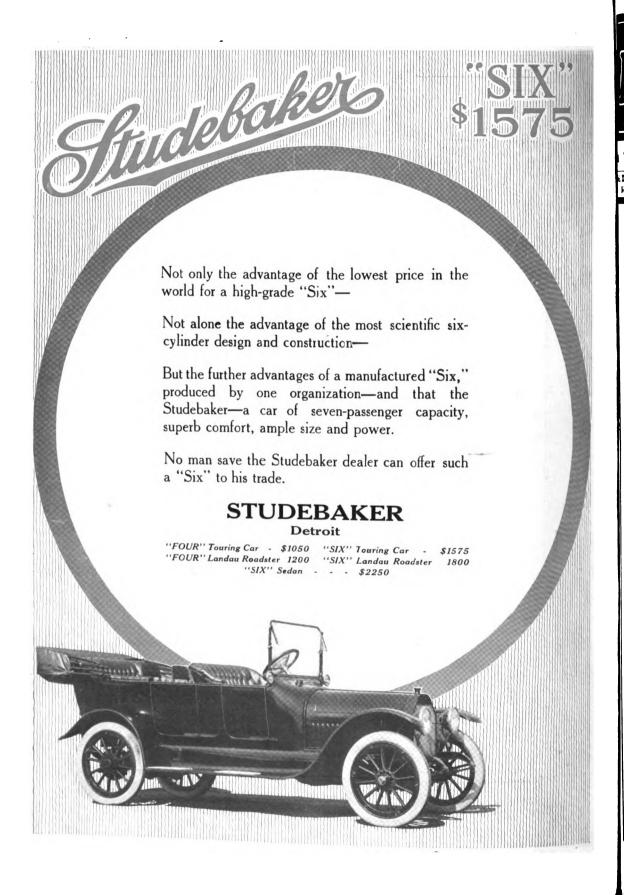
KLAXON

This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy.

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# MOTOR WORLD

Trade Paper Giving the World's Motor New

ol. XXXVIII No. 8

New York, February 12, 1914

Ten cents a co Two dollars a ye



HE last time you repaired or replaced an inner tube, you had to pry the casing from the rim. Do you remember what a difficult job it was?

Now, here is a rim which permits of tire-repairs without separation of the casing from the metal-flanges. Does that sound good to you?

Anyway, it sounds good enough to lots of shrewd dealers to make them say, "The Number Sixty looks good to us, and we're going to push it to the limit." Incidentally, those dealers will make a very nice profit.

The Standard Welding Company

iblished Weekly by the Motor World Publishing Company, 1600 Broadway, New Yo

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## ult-Hartford Shock Absorber

## "Car Comfort" Closes the Sale

E VERY dealer knows the selling value of "comfort."

In the many cases where decision lies with the ladies, it is his most telling argument.

The TRUFFAULT-HARTFORD SHOCK ABSORBER assures the maximum possible degree of comfort. It eliminates all vibration. It controls every degree of surface inequality from the barely noticeable movement experienced on a well made road to the jolt and jar of a level crossing.

And besides, on a car equipped with Truffault-Hartfords the depreciation of engine and running gear is reduced to a minimum—the danger of crystallization in axles and steering knuckles is greatly decreased while a considerably greater tire mileage is assured.

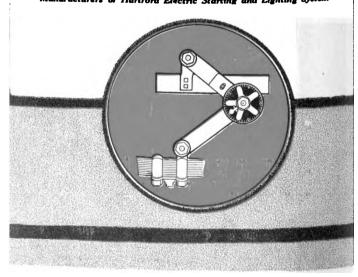
Those invaluable features have already been so completely realized by twenty-five leading car manufacturers that they include Truffault-Hartford Shock Absorbers as standard equipment on their entire output.

Insist on having them on the car YOU sell. Four models—price varies from \$16 to \$60 per set of four.

#### HARTFORD SUSPENSION CO.

E. V. HARTFORD, Pres.

Office and Works: 142 Bay Street, Jersey City, N. J. Manufacturers of Hartford Electric Starting and Lighting System





EVERY feature essential in the construction of Ball Bearings that will stand the wear and tear of strenuous automobile service is embodied in R. I. V.

R. I. V. Ball Bearings are built to satisfy the demands of the greatest automobile engineers in the world, and manufacturers who will have nothing but the best for the vital parts of their cars unerringly choose the "Here, There and Everywhere Ball Bearings" above all others.

#### R. I. V. COMPANY

S. W. Cor. 57th St. & Broadway

IMPORTED SINCE 1904

New York

The Guarantee Given With the

# ORBIN-BROWN SPEEDOMETER

"The Speedometer of Absolute Accuracy"

was the first guarantee fair to the car manufacturer, fair to the dealer, and fair to the consumer.

No attempt was made to stimulate sales through an extravagant guarantee which would eventually have to be revoked.

We issued a guarantee that completely insured a full year of service—no more—no less. We did not endeavor to dazzle the unsuspecting with claims as untenable as they were spectacular.

The result has been that where others have hedged, modified, and radically changed their guarantee, the Corbin-Brown's guarantee has never been altered. It is the same to-day as when the Corbin-Brown was first introduced.

#### The Guarantee:

The Corbin-Brown Speedometer is guaranteed for tweive months from date of sale. We will replace any defective parts due to mechanical defects or workmanship, if returned prepaid to our factory subject to our inspection.

Write for 1914 Catalog

## The Corbin Screw Corporation THE AMERICAN HARDWARE CORPORATION, SUCCESSORS

New Britain, Conn.

BRANCHES:

New York

Chicago

Philadelphia

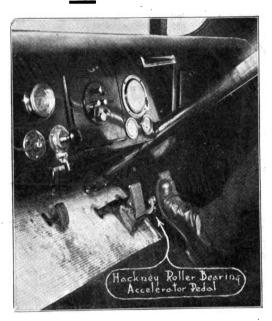


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## The New Roller-Bearing CCELERATOR

is the Life of Your Automobile



#### decreases the expenseincreases the efficiency

The new Roller-Bearing Accelerator Pedal will add so much to the efficiency of your car that you will be surprised.

It gives you a perfectly even flow of gasolene, and does away almost entirely with the necessity of the hand throttle.

It enables you to increase or decrease the speed much quicker and more gradually.

Gives more mileage and adds greatly to the pleasure of driving and to the comfort of the

occupants in the car.

Decreases the wear and tear on the engine and other working parts; also a saving on tires.

Consumes less gasolene. Adjustable and

consumes less gasoiene. Adjustable and easily attached.

Introductory price, \$3.50. Send for same and give make and type of car, also state whether nickel, brass, or black finish is wanted. Special discount to dealers.

#### **ROLLER-BEARING FOOT PEDAL CO.**

Dept. A, Hackney Building,

St. Paul, Minn.

ROLLER BEARING FOOT PEDAL CO.,
Dept. A, Hackney Bldg., St. Paul, Minn.
Enclosed find \$3.50. Send me for trial one Roller Bearing Accelerator Pedal. If not satisfied, I may return in 10 days and you will refund my money.

(Write your name and address plainly in margin below.)

## 464% More Power

THE famous Keokuk dam (the largest in this country, which cost \$27,000,000.00) develops 310,408 horsepower.

The combined horsepower of 50,000 Overlands (our 1914 output) is 1,750,000 horsepower or 5.64 times as great as this powerful dam.

This simple comparison is merely to show you more clearly, by illustration and figures, what 50,000 cars a year mean—what a wonderful force it is.

Such force is felt in various ways, the most important of which is the economy it effects.

Manufacturing, purchasing and marketing 50,000 cars a year puts us in the supreme position of buying for less, making for less and selling for less—and the "selling" is what interests you most.

From any standpoint the \$950 Overland is the lowest priced car made—size, power and capacity considered.

An Overland costs you 30% less than any other similar car made.

For catalogues please address Dept. 50.

### The Willys-Overland Company, Toledo, Ohio

Manufacturers of the famous Overland Delivery Wagons, Garford and Willys-Utility Trucks. Full information on request.

\$950

Completely Equipped ( o. b. Loirdo f the famous Overlan Electric head, side, tail and dash lights Storage battery 35 horsepower motor 114-inch wheelbase 33 x 4 Q. D. tires Three-quarter floating rear axle

Timken and Hyatt bearings Deep upholstery Brewster green body nickel and aluminum trimmings Mohair top, curtains and boot ritity Trucks. Full Ing.
Clear-vision, rainvision windshield
Stewart
speedometer
Cowl dash
Electric horn
Plush U doors with
concealed hinges

\$1075

With electric starter and generator f.o.b. Toledo Vol. XXXVIII

New York, U. S. A., Thursday, February 12, 1914

No. 8

#### KLAXON ISSUES LICENSES FOR TWO HAND HORNS

Lovell-McConnell Takes Unexpected Action-Licenses, However, Restrict Pilot and Reliance to Existing Models.

Having won its suit to establish the validity of the Klaxon patents, what the Lovell-McConnell Mfg. Co. would do next was one of the burning questions which concerned no inconsiderable portion of the trade. After a fashion, the Lovell-McConnell people promptly answered the query by instituting proceedings against makers who previously had not been sued and by pressing still harder a number of suits which were pending.

While this was going on, however, there are those who are aware that one of the immediate fruits of the favorable decision secured in the Newtone case was the appearance of a number of applicants for license to operate under Klaxon patents; but until early this week the Lovell-McConnell company, while admitting that the subject was under consideration, permitted to escape no well-marked suggestion as to just what its intentions in that direction might be.

On Tuesday, however, it settled at least some of the doubts by issuing licenses to two horn manufacturers—the Nonpareil Horn Mfg. Co.. of New York, makers of the Pilot hand-operated horn, and the Culmer Engineering Co., also of New York, which produces the Reliance horn, likewise a hand-operated device, and against each of whom action for infringement was instituted since the handing down of the Newtone decision.

In the case of both the Pilot and Reliance horns, however, the license is of a special nature and authorizes the holder to make and market, on royalty, their respective horns only in their present forms and in no other shape or model. The issuance of the license carries with it the licensees' recognition of the validity of the Klaxon patents, Nos. 923,048. 923,049 and 923,122, and also their consent to the issuance of injunctions against them.

When asked whether other licenses will be issued, the Klaxon people merely wagged their heads and refused to commit themselves.

#### Fifty per Cent. for Schacht Creditors.

According to a report of Receiver Dietz, creditors of the Schacht Motor Car Co., of Cincinnati, O., will receive a dividend of 50 per cent. It shows that receipts between April 19, 1913, and January 26th, of this year, amounted to \$234,781.62 and his disbursements to \$204,759.52. In addition to the cash balance, \$30,022.10, there are notes and accounts receivable amounting to \$41,521.37. The total claims aggregate \$139,439.79.

#### Nyberg Secures Support in Canada.

Despite his expensive experience in Anderson, Ind., where the Nyberg Automobile Works went into bankruptcy several months ago, Henry Nyberg is seeking to reestablish himself as an automobile manufacturer, the place selected being the town of Berlin. Ont. He has been negotiating with the local boards of trade for some time, and it is now stated that "as 250 lots have been sold to citizens, the establishment of a Nyberg automobile plant in Berlin is assured."

#### Merger Rumors Revived in Detroit.

After a long period of quiet, rumors of mergers are again afloat in Detroit. This time they link the names of two heavily millioned automobile corporations, but efforts to run them to their source proved of no avail, although they are believed to emanate from a once prolific outlet for such rumors.

## BALL BUYS INTER-STATE ASSETS AT PUBLIC SALE

Millionaire Stockholder and Former President in Keen Competition for Property — Millionaire Gets it for \$215,000.

Evidence of the internal dissension which assisted in bringing about the failure of the Inter-State Automobile Co., of Muncie, Ind., on October 17th last, was still apparent when the property was offered for sale by the referee on Thursday last. 5th inst.

Three bidders appeared on the scene, two of whom represented the interests which had conflicted in the Inter-State management. They were Frank C. Ball, one of the stockholders, and Thomas F. Hart, former president and general manager, the latter of whom was represented by Charles A. Finnegan, the capitalist, who purchased a portion of the E. R. Thomas assets in Buffalo, when they were disposed of more than a year ago.

After keen competition, Ball, who is a member of the firm Ball Bros., millionaire fruit jar manufacturers in Muncie, bid in the property for \$215,000. After sealed proposals of the several bidders had been rejected, Finnegan offered \$150,000 for the assets, and when Samuel L. Winternitz, of Chicago, objected to the procedure and demanded that the property be auctioned in parcels, guaranteeing \$175,000, Ball raised the amount to \$200,000, and thereafter Finnegan and Ball alternated in increasing the amount until it reached \$215,000, when Finnegan dropped out and Ball, as stated, secured the property. This will net the creditors about 40 per cent.

What Ball ultimately will do with it is not known. For the present, however, he will cause the factory to resume operations until the unfinished cars on hand are completed, but he declined to admit the truth of a report that later he will take up the production of a much lower-priced car. He said his chief object was to save the plant for Muncie and keep it out of the hands of the other bidders, who desired to wreck and dispose of it piecemeal.

Thomas F. Hart, the former president, declared that the bankruptcy proceedings and Ball's chief object were to freeze him out of the Inter-State company, in which Hart is credited with having dropped more than \$100,000 of his own money.

#### Mitchell Closes, Marmon Opens Branch.

In line with its policy of disposing of its retail branches, the Mitchell-Lewis Motor Co., of Racine, Wis., has turned the retail business of its New York branch over to the Drouet & Page Co., of 1890 Broadway, which heretofore has handled only Palmer-Singer cars; the wholesale business of the branch, which covers 14 States, will be continued by the branch organization in a building owned by the Mitchell-Lewis company at 419 West 55th street. Part of the branch salesrooms at 1855 Broadway will be occupied by the newly formed Marmon New York Co., which is a branch of the Nordyke & Marmon Co., of Indianapolis,

The Marmon branch will be managed by F. G. Carrie, who formerly managed the Marquette branch in New York; H. E. Wagner, at one time sales manager of Wyckoff, Church & Partridge, Commer importers, will act as Eastern sales manager, with headquarters at the branch. Heretofore the Marmon business in New York has been handled by the Sidney B. Bowman Automobile Co. in conjunction with the Oakland business.

#### Chandler Anticipates Dividend Date.

Because of the prosperity that has attended its operations, the directors of the Chandler Motor Car Co., of Cleveland, at its annual meeting last week, authorized the payment of the seven per cent. dividend on its preferred stock as of July 1, 1913, when business was begun, instead of as of January 1, 1914, which was the date specified when the stock was issued. The company's financial report shows that not only had dividends been earned upon the preferred, but that a surplus equal to 32 per cent. per annum had been earned on the common. Also that there is in hand for delivery prior to June 30th next, orders for Chandler light "six" cars to the value of \$2,500,000. All officers of the company were reelected.

#### **NEW COLUMBUS BUGGY IS** FACED BY A NEW CRISIS

Lack of Ready Cash Brings Reorganized Company to Sudden Stop-Plant Shuts Down, Four Directors Resign.

Reorganization of the Columbus Buggy Co., of Columbus, O., as the New Columbus Buggy Co., which occurred less than three weeks ago, was followed on Thursday last by a sudden shutdown of the plant and the somewhat unlooked for announcement that lack of capital had compelled the suspension of operations.

Preceding the shutdown, four directors tendered their resignations, to take effect immediatealy. They are O. A. Miller, Robert Jeffrey and F. O. Schoedinger, all of Columbus, and T. J. Cavanaugh, of St. Louis, all of whom were among the creditors of the old company who, after conducting the plant for eight months, had brought about the recent reorganization. Their resignations left in charge only the titled officers, as follows: George W. Lattimer, president; E. R. Sharp, vice-president; D. N. Postlewaite, secretary; George W. Bright, treasurer.

It is stated that the company has on hand more than \$60,000 worth of orders for its gas and electric cars and horsedrawn buggies, but the expert accountant has reported that \$300,000 will be necessary to handle the business and place the company on a firm footing. As the directors could not borrow money, or raise it through the sale of stock, the shutdown became imperative.

What will be the outcome of the situation has not yet been made plain. Efforts to raise the capital are still in progress and there are those who believe that the difficulty will be tided over. On the other hand, there are those who think there is no hope and who are of the opinion that the assets of the company should be sold and divided among the creditors who brought about the reorganization.

#### Gray & Davis Beat DuBois Patent.

Even though the DuBois Safety Lamp Co., of New York City, has a patent on an inside set-screw for holding a headlight in place, it apparently has not the only patent under which such a device may be manufactured, for this week in the United States District Court for the Southern District of New York Gray & Davis, Inc., of Boston, won out in a

patent suit brought a year and a half ago by the DuBois company.

The complaint charged infringement of patent No. 919,837, granted April 27. 1909, to R. G. DuBois, of South Orange, N. I. The device concerned is a setscrew which holds the lamp to the prongs of the bracket, the head of the screw being inside the lamp, where it cannot be turned unless the lamp is opened. It is designed to protect the clothing of a motorist. The court decided that Grav & Davis has a right to make this construction under a patent of its own, No. 764,396, granted July 5, 1904.

#### Polish Producers Add Engine Starters.

For the purpose of almost immediately manufacturing and marketing an automatic engine starter, in addition to polishes, carbon removers, etc., the Cochran Mfg. Co. has been organized in St. Louis, Mo., and is located at 2308 Locust street, which is in a block owned, it is stated, by members of the new enterprise. They are John J. Cochran, president; W. E. Wrisberg, treasurer; Frank Murphy, manager.

#### Republic Rubber to Increase Capital.

In addition to a preliminary resolution providing for the retirement of \$2,500-000 of its preferred stock and refunding it under a new issue, the Republic Rubber Co., of Youngstown, O., has voted to increase its capital. The exact amount of the new issue, however, has not yet been determined.

#### McNab May Revive Piggins Truck.

E. N. McNab, of Racine, Wis., who purchased the plant of the bankrupt Piggins Motor Truck Co., of that city, is seeking to revive the business. With the end in view, he is negotiating with several moneyed men in Reedsburg, Wis., but nothing definite has yet come of the transactions.

#### Knox Property Finally Ordered Sold.

After having been in the hands of a trustee for more than a year, the plant and other assets of the Knox Automobile Co., of Springfield, Mass., which has continued in operation at all times. is to be offered at public sale. The Federal court has issued an order to that

#### Cino Makers Sue Chicago Dealer.

Haberer & Co., of Cincinnati, have filed suit for \$10,780 against John T. Neake, trading in Chicago as the Cino Motor Car Co. The amount represents an alleged balance due to his account.

## EPIDEMIC OF AUTOMOBILE PROMOTIONS IN FAR WEST

Six of Them Projected in California, One in Utah—Include Everything from Big Trucks to Small Car at \$410.

What amounts almost to a belated epidemic of automobile manufacturing promotions has broken out on the I'acific Slope. Within the past six weeks at least seven different enterprises of the sort have been undertaken, two of which, as previously reported in Motor World, already have come to a head—i. e., the Mission Motor Car Co., of Los Angeles, and the Wasatch Motor Mfg. Co., of Salt Lake City, Utah.

The four others that are under way—all in California—are the Lincoln Motor Truck Co., of Los Angeles; the Hydraulic Truck Co., also of Los Angeles; the Brown Auto Co., of Richmond, and a truck project fathered by C. P. Kiel, who is inclined to establish himself in Oakland, and still another in Torrance, in which the names of the promoters are withheld.

Of the several enterprises, the Lincoln Motor Truck Co., although born in Los Angeles and of which E. F. Taylor and Charles Boulton are the moving spirits, is prospecting for a site in Sacramento; the Hydraulic Truck Co., of which W. E. Barnes is president and D. L. Whitford is general manager, expects to build in Colton; the Brown Auto Co., of which Herbert F. Brown and Charles Smith are the principals, plans to build a \$410 car in Richmond, while C. P. Kiel, who expects to locate in Oakland, has a four-cylinder, worm driven truck in view.

News of the Torrance project came through the W. C. Hendrie Rubber Co., which recently established a tire factory in that town. According to these Hendrie stories, Eastern men are behind the project, which has for its purpose the production of a "strictly California car equipped with a Knight engine."

#### Rauch & Lang Hit Back at Lindsay.

Instead of receiving \$5,000 from the Rauch & Lang Carriage Co., of Cleveland, O., the Lindsay Auto Parts Co., of Indianapolis, may have to pay back the \$12,500 royalty which they received from the Cleveland electric vehicle manufacturers. At any rate, the latter have filed a countersuit seeking to recover that sum, which represents royalties paid under the almost famous Lindsay axle patent.

#### MOTOR WORLD

In their complaint, Rauch & Lang allege that Thomas J. Lindsay and Willard Harmon, and their successors, the Lindsay company, have permitted other manufacturers to operate under the Lindsay patent, so far as electric vehicles are concerned, which permission is claimed to constitute a breach of contract. Three weeks ago, the Lindsay company instituted action to recover \$3,600 royalty alleged to be unpaid, and in addition asked for \$1,400 as damages.

#### To Assemble Gramm Trucks in Tacoma.

According to Tacoma (Wash.) advices, the erection of a garage and assembling plant for the Gramm-Bernstein Motor Truck Co. has been commenced at South Seventh and C streets in that city. The structure will be of brick, 60 x 100 feet. The first floor will be utilized as a salesroom and the second as an assembling plant and machine shop, in which, it is stated, as least eight trucks per week will be assembled.

#### Stearns Branch Again Agency.

Having changed its Philadelphia husiness from an agency into a branch in September, 1912, the F. B. Stearns Co., of Cleveland, O., has now changed it back into an agency; the latter is headed by William G. Yerkes and is styled the Stearns Motors Co. Yerkes, who heretofore has handled the Moons, will handle both cars at 245 North Broad street.

#### Laidlaw, Jr., Becomes a Corporation.

William E. Laidlaw, Jr., sole importer of English Burbank motor top cloth and other automobile fabrics, has converted his business into the Laidlaw Co., Inc., under the laws of New York. There will be no change in the personnel, however, "except," in the words of Laidlaw himself, "in additions which will result in increased efficiency."

Trustees Named for Ohio Motor Car.
Clyde P. Johnson, William T. Johnson and William Bennett have been named as trustees of the Ohio Motor Car Co., of Cincinnati, which, after a

long fight, was recently adjudicated a bankrupt. The trustees were required to give bond in the sum of \$5,000.

#### Would Give Canadians Cooperative Tire.

T. J. Costello, of Buffalo, is coquetting with Welland. Ont., with a view of establishing there a "cooperative automobile tire factory." It is the usual aim to sell tires to "cooperating" stockholders at cost, and to all others at 40 per cent. higher prices.

## GRAY & DAVIS SYSTEM IS ADAPTED TO FORD CARS

Picard Acquires the Sole American Selling Rights and Reports Ford's Approval of Device —Sells for \$110.

There is now available a Gray & Davis electric lighting and starting system for Ford cars, and A. J. Picard & Co., of New York, has the sole selling rights thereto.

The new system was formally announced late last week and, quite apart from the prominence of Gray & Davis, it means more than appears on the surface, for, according to Picard, the new system has the support and approval of the Ford Motor Co. itself, and is the only one which may be applied to Ford cars without affecting the guarantee thereon, provided only that it is used in connection with an Edison battery. Picard stated that, as a result of an interview with Henry Ford himself, a letter to this effect will be issued to all Ford agents.

Gray & Davis state that they have no knowledge of such an arrangement and, since making the statement, Picard, carrying one of the new systems, has left for a visit to all the trade centers as far west as the Pacific Coast. He is an old personal friend of Henry Ford, having sold him steel in other years.

Picard at present handles the entire Gray & Davis account for the metropolitan district, and Ford's support is understood to have been given not only because of the intrinsic value of the Gray & Davis device but because of the desire to put Picard on the road to real riches.

The Gray & Davis Ford system differs from others in that it has separate lighting generator and starting motor; all other Ford electric systems have a combined unit. The starting motor in the Gray & Davis system is mounted close behind the radiator and is connected to the crankshaft extension through an enclosed worm gearing and chain drive; the lighting generator is mounted at the left side of the engine and driven by belt. The battery is a 6-volt Edison. The system is to cost \$110, including lamp adaptors, wiring, switches, etc.

#### Chicago Branch for Miller Rubber.

The Miller Rubber Co., of Akron, O., has established a branch in Chicago at 2118 Michigan avenue. It is in charge of W. E. Anderson.

## TWO APPEALS ARE TAKEN BY KLAXON'S OPPONENTS

Newtone Would Reverse Sweeping
Decision Against it—Long.Horn
Marketer Seeks to Block
Lovell-McConnell Attack.

With two appeals-one by the maker of the Newtone horn and the other by the marketer of the Long horn-the litigation of the Klaxon horn is now on its way to receive the attention of the United Circuit Court of Appeals. For the Automobile Supply Mfg. Co., which recently was beaten in the bitterly fought suit brought by the Lovell-Mc-Connell Mfg. Co., has appealed from the decision which declared it an infringer: and the H. W. Johns-Manville Co., which was sued by and which sued the Klaxon makers, has appealed from an order of the court denying a preliminary injunction restraining the Klaxon makers from interfering with the Johns-Manville advertising of Long horns.

The Automobile Supply Mfg. Co. in its appeal reiterates its allegation made in the lower court that the Newtone horn infringes no valid claim of the Klaxon patents, and that any claim of the patents which can be applied to the Newtone horn is not valid because of Priority. Aside from these principal grounds of appeal, there is the usual long assignment of errors.

The Johns-Manville appeal was argued Tuesday. 10th inst., and will be decided shortly; immediately following the Klaxon victory over Newtone, Johns-Manville, which markets the Long horn, hurried into court with the request that Klaxon be restrained from issuing threatening advertising and from interfering with Long horn advertising.

But aside from these, there is activity in other quarters; in the United States District Court for the Southern District of New York the Klaxon and Newtone forces are again clashing over suits brought some time ago against the National Auto Supply Co., Imperial Automobile Supply Co., New York Auto Supply Co., 35% Automobile Supply Co., Crane & Wagner Auto Supply Co., and American Auto Supply Co., all dealers in Newtone horns.

The Klaxon allegation is that these dealers agreed to abide by the decision in the Klaxon suit against the Newtone company itself, and the Lovell-McConnell company is now moving for decrees on these grounds. However, when the motions were reached January 30 they

were adjourned that the Newtone attorneys might attempt to secure a suspension of the injunction secured against the Newtone company. This, however, was denied and the motions are due for another hearing Friday, 13th inst.

#### Parke and Traske Take up Cyclecar.

Frederick K. Parke, who only recently relinquished the general management of the Universal Motor Truck Co., of Detroit, and Charles A. Trask have formed the International Cyclecar Co., whose general offices will be located in the United States Rubber Building in New York City. Meanwhile arrangements are being made to manufacture the little vehicle, which will be styled the Economy cyclecar, in Providence, R. I. It will have a tread of 36 inches and a wheelbase of 100. The vehicle was developed by Trask in Indianapolis, where, until recently, he served in turn as a member of the engineering staff of the Henderson and Nordyke & Marmon companies. although best known as factory manager of the Cartercar Co., with which he was associated for five years.

#### Well-Known Men in Euclid Cyclecar.

E. S. Cameron, who only recently reestablished the Cameron car in West Haven, Conn., together with Frank S. Corlew, his sales manager, and E. A. Scheu, general manager of the Invader Oil Co., and Charles F. Kellom, of Philadelphia, who founded that company, have organized the Euclid Motor Car Co. for the purpose of manufacturing a \$395 cyclecar of that name. The little vehicle, which will have a 40-inch tread and 96inch wheelbase, will be manufactured at the Cameron plant in West Haven. The company's general office, however, will be located at 80 Broad street, New York City.

#### Sharrer Top Appoints Coast Distributer.

The Sharrer Patent Top Co., of New York, makers of the one-man top of that name, has designated Hughson & Merton, of San Francisco, its exclusive selling agents for the States of California, Washington and Oregon. In addition to its San Francisco establishment, the firm maintains branches in Los Angeles and Seattle.

#### Beckley-Ralston Secures Invader Oil.

The Beckley-Ralston Co., of Chicago, one of the largest jobbers in the Middle West, has secured the Invader Oil account for that part of the country. It will carry a large stock and quote to dealers the same prices that are quoted by the Invader company itself.

## BRITISH EXPORTS STILL OUTWEIGHED BY IMPORTS

With Parts and Tires, Year's Exports Aggregate Nearly \$22,-000,000 — Imports Increase Million and a Quarter.

For the year 1913, British imports of cars, chassis, parts and tires increased by more than one and one-quarter million dollars over the figures for the previous year, despite the fact that the number of cars and chassis dropped off by 113. The total for the twelve months is \$37,056.290, as against \$35,729.635 for the year 1912, the difference being \$1.326.455.

The total number of cars and chassis shipped during 1912 was 14,891, as against 14,778 for 1913, the values being, respectively, \$18,542,535 and \$18,164,635, and the difference, which is a loss, \$347,900. Tires and parts, on the other hand, made a gain, the figure for the year ending 1912 being \$17,087,100 as against \$18,889,665 for 1913; the difference is \$1,802,565.

A substantial part of the total net gain was made during the last month of the year, the figure for December, 1913. being \$3,153,315 as against \$6,611,565 for the corresponding month in 1912. The figures include 876 cars and chassis in December valued at \$1,170,465 and 1,208 cars and chassis in December, 1913. valued at \$1,386,640. Tires and parts for the two months therefore were valued at \$1,444,100 and \$1,666,675, respectively. a gain of \$222,575.

British exports of cars, chassis, parts and tires also made very considerable gains during the year, the figure being \$21,827,400 as against \$18,412,340 for the year 1912; the difference is therefore \$3,415,060.

Of the total amount gained. \$2.022.255 represents the difference between 6.457 cars and chassis exported in 1912 and 8.819 exported in 1913. Parts and tires for the two years were valued at \$6.107.645 and \$7,480,460, respectively.

During the last month in the year, however, the total exports fell off by \$42,950, the figure for December. 1912, being \$1,907,300 and that for December, 1913, being \$1,864,350. Of the loss, \$54-700 represents the difference between the valuation of 638 cars and chassis shipped in December, 1912, and 739 shipped in December, 1913. The valuation of parts and tires exported increased in December, 1913, by \$11,950 over \$614,185, which was the figure for December, 1912.

Wallingford, Conn.—Wallingford Automobile Co., under Connecticut laws; authorized capital, \$5,000.

Cleveland, O.—Petro Automobile Co., under Ohio laws; authorized capital, \$1,000. Corporators—J. J. Petro, A. J. Motika and Joseph Cherovski.

Columbus, O.—Heeb Auto Garage Co., under Ohio laws; authorized capital, \$10,000. Corporators—C. M. Heeb, Victor Reintz and I. B. Davids.

Galion, O.—Morton Motor Plow Co., under Ohio laws; authorized capital, \$300,000. Corporators—R. A. Morton, B. L. Sites and C. V. Goldsmith.

Columbus, O.—Brasher Motor Car Co., under Ohio laws; authorized capital, \$10,000. Corporators—L. A. Brasher, E. G. Dillow and H. E. Walker.

Louisville, O.—Dixie Auto Supply Co., under Ohio laws; authorized capital, \$5,000. Corporators—Albert H. Drake, Herman Janson and J. A. Kolb, Sr.

Corinth, N. Y.—Auto Fender Safety Lamp Co., under New York laws; authorized capital, \$10,000. Corporators— T. N. Derby, W. J. and J. H. Pitkin.

Columbus, O.—Neil Automobile Livery Co., under Ohio laws; authorized capital, \$15,000. Corporators—C. A. Weinman, J. J. Hogan and John A. Connor.

Norfolk, Va.—Old Dominion Tire Corporation, under Virginia laws; authorized capital, \$10,000. Corporators—J. E. Guy and B. S. Joynes, both of Norfolk.

Mebane, N. C.—Mebane Motor Co., under North Carolina laws; authorized capital, \$25,000. Corporators—W. A. Murray, P. L. Cooper, T. J. Carter, W. W. Corbett and S. G. Morgan, all of Mebane.

Hamilton, Ont.—Willys-Overland Co. of Canada, under Canadian laws; authorized cap.tal, \$500,000; to manufacture automobiles. Corporators—J. N. Willys and others.

New York, N. Y.—Model Garage Co., under New York laws; authorized capital, \$1,000. Corporators — Bonaventura Sasso, Robario Saso and John Saso, all of 796 Eighth avenue.

Ponca, Okla.—Bodock Gasolene Co., under Oklahoma laws; authorized capi-

tal, \$50,000; to manufacture gasolene from casing head gas. Corporators—Geo. L. Miller and others.

Joliet, Ill.—Dayton Cyclecar Co., under Illinois laws; authorized capital, \$50,000; to manufacture and deal in motor cars. Corporators—T. J. Moore, J. Storch and T. F. Donovan.

Newark, N. J.—Hunter Rubber Co., under New Jersey laws; authorized capital, \$150,000; to manufacture rubber goods. Corporators—C. A. Hunter, N. C. Hunter and G. E. Post, all of Newark.

Boston, Mass.—Pathfinder Sales Co., under Massachusetts laws; authorized capital, \$40,000; to deal in motor vehicles. Corporators—F. R. Parker, P. L. Dole and B. F. Borhek, all of Boston.

Detroit, Mich.—Detroit Battery Co., under Michigan laws; authorized capital, \$10,000; to manufacture batteries. Corporators—William H. Ducharme, Myron G. Pierson and George R. Beamer.

Port Jervis, N. Y.—J. B. Williams Co., under New York laws; authorized capital, \$5,000; to conduct an automobile business. Corporators—J. B. Williams, F. S. Leonard and J. P. Crowley, all of Lake Placid.

Paterson, N. J.—Auto Tire & Supply Co., under New Jersey laws; authorized capital, \$50,000; to conduct a general motor vehicle business. Corporators—G. J. Giger, W. W. Evans and A. G. Sholer, all of Paterson.

Plainfield, N. J.—E. & C. Auto Sales Co., under New Jersey laws; authorized capital, \$25,000; to conduct a general motor vehicle business. Corporators—I. A. Endress, F. Endress and E. A. Craig, all of Plainfield.

New York, N. Y.—Colonial Motor Sales Co., under New York laws; authorized capital, \$2,500. Corporators—Hyman Rosenson and Ray Rosenson, both of 393 First avenue; Robert Lynch, 314 Madison street.

Passaic, N. J.—Cyclecar Distributing Co., under New Jersey laws; authorized capital, \$60,000; hiring of cyclecars, motor vehicles, etc. Corporators—E. Huebner, Paterson; G. Taradash and P. Miskovsky, both of Passaic.

Camden, N. J .- Holl Motor Carriage

Service Co., under New Jersey laws; authorized capital \$125,000; to manufacture automobiles, motorcycles, etc. Corporators—A. H. Holl, H. C. Henry and L. F. Holl, all of Camden.

New York, N. Y.—Thomey Auto Service. under New York laws; authorized capital, \$1,000. Corporators — Eugene Thomey, 362 East 72nd street; Fred Thomey, 226 East 67th street; Harry Abraham, 206 West 140th street.

Brooklyn, N. Y.—Globe Motor Car Co., under New York laws; authorized capital, \$5,000. Corporators — Franklin G. Dunham, 296 Sterling place; Henry W. Allers, 61 South Ninth street; Henry W. Allers, Jr., 288 Lefferts avenue.

Buffalo, N. Y.—Buffalo Cyclecar Corporation, under New York laws; authorized capital, \$5,000. Corporators—C. B. Porter and Theodore W. Hammond, both of 38 Larkin street; Walter C. Newcomb, 605 D. S. Morgan Building.

Brooklyn, N. Y.—Rodney Garage Co., under New York laws; authorized capital, \$1,000; to operate a garage. Corporators—Curtis C. Simpson, 1375 Union street; Natalie Simpson and Harry W. Simpson, both of 758 East 12th street.

Wilmington, Del.—Keller Cyclecar Corporation, under Delaware laws; authorized capital, \$250,000; to manufacture cyclecars, motor trucks, airships, etc. Corporators—H. E. Latter, W. J. Maloney and O. J. Reichard, all of Wilmington.

Corning, N. Y.—Steuben Ford Co., under New York laws; authorized capital, \$1,000; to conduct a general motor vehicle business. Corporators—William P. Zwilling and Anna M. Zwilling, both of Elkland, Pa.; Peter Knobloch, Lyons. N. Y.

New York, N. Y.—United Automobile Racing Association, under New York laws; authorized capital, \$5,000. Corporators—Lester W. Marks and Alfred Marks, both of 390 Stuyvesant avenue, Brooklyn; Otto V. Mathews, 1234 Broadway.

Weedsport, N. Y.—Whitford Corporation, under New York laws; authorized capital, \$25,000; to manufacture motor trucks, motor cars, etc. Corporators—Charles E. Whitford and Charles S. Gay-

wood, both of Weedsport; Thomas M. Osborne, Auburn.

Wilmington, Del.-Universal Lubricants Co., under Delaware laws; authorized capital, \$100,000; to manufacture goods, wares and merchandise of all kinds. Corporators-J. F. Curtin and C. E. Eaton, both of New York City; J. M. Satterfield, Dover.

New York, N. Y .- Lubricator Co., under New York laws: authorized capital, \$100,000; to manufacture lubricators for motors, engines, etc. Corporators--L. R. Blach, Manhasset; David C. Thomas, 52 West 110th street; William C. Ottiwell, 268 East 181st street.

New York, N. Y .- Ford Owners' Service Corporation, under New York laws: authorized capital, \$25,000; to conduct an automobile business. Corporators-Frank A. Williams, 361 W. 121st street; Frederick C. Cimons, Great Neck, N. Y.; C. Weiss, 26 East 109th street.

Wilmington, Del. - Superior Motor Specialty Co., under Delaware laws; authorized capital, \$250,000; to manufacture and sell motor cars, vehicles of all kinds, air ships, etc. Corporators-F. R. Hansell, Philadelphia; G. H. B. Martin and S. C. Seymour, both of Camden, N. I.

#### Minor Business Troubles.

T. R. Harper has been appointed receiver in bankruptcy for the Beloit (Wis.) Auto & Machinery Co.; it operates a garage and machine-shop on 3rd street in Beloit. Its liabilities are said to exceed its assets by only a small

Charles W. Mabey has been appointed receiver for the Gilson Motor Starting Co., of Indianapolis, on the petition of F. H. Langenskamp; Langenskamp claims the company owes him \$244.44, is unable to meet its obligations and is in danger of becoming insolvent. The court has instructed Mahey to continue the business until he can dispose of it at private sale.

Although the Thomas Howard Co., of Brooklyn, N. Y., which is the distributer of Correja cars, opposed the voluntary bankruptcy of Vandewater & Co., of 91 Prince street, Elizabeth, N. J., the maker of Correja cars, the Federal court in Trenton, N. J., last week refused to dismiss the petition; the matter was referred to a referee. Vandewater, Howard stated, is under contract to biuld 300 Correja cars a year, and it was charged that the bankruptcy move was an attempt to evade completing this contract; the Vandewater assets are said to be \$53,000 and the liabilities \$30,000.

#### LAW FORCES GARAGE TO **OUIT PLACE OF BUSINESS**

After Many Years, It is Found to be Too Near Schoolhouse-Supreme Court Upholds the Fire Regulations.

It is quite possible for a garageman to be forced out of business, if, as he has established himself, a law is passed which is such that he cannot comply with it. This has happened in the case of James McIntosh, who has operated a garage in New York City since 1903, for under a law of 1911 he cannot get a permit to run his business.

He is located next to a schoolhouse at 130 West 102d street and got permits for his garage every year up to 1910; when he went after one thereafter he was denied on the grounds that he was within 50 feet of a schoolhouse, the law forbidding garages "within 50 feet of a schoolhouse, theater or other place of public amusement or assembly.'

McIntosh brought suit again Fire Commissioner Joseph Johnson to compell him to issue a permit; McIntosh declared the law to be unreasonable in that he either had to get a new location or quit business. The Supreme Court for New York county denied his motion for a peremptory writ of mandamus, whereon McIntosh went to the Appellate Division, First Department, and this week he was again beaten.

"If this ordinance is valid it affords complete justification for the refusal of the defendants to issue a permit," says the court's decision. "The relator's contention is that the ordinance of regulation, in so far as it forbids the issue of a license to a garage within 50 feet of a school, is unreasonable and therefore void. We do not so consider it. The affidavits read in behalf of the defendants, which, for the purpose of this motion, must be accepted as true, show very clearly the constant danger that there is that a fire may break forth in a garage, and that, from the nature of the materials stored therein, the results of such a fire are likely to be very disastrous if a public place of assemblage be nearby where many persons are congregated, and especially if the place of assemblage be a school filled with young children.

"The danger, perhaps, will result rather from panic than from the fire itself, but in either case it is a danger to be guarded against. It appears that there have already been three fires in

the very building for which a permit is now asked, but fortunately they all occurred when the school was not in session. The regulation or ordinance is well within the power given by the Legislature and is well adapted to carry into effect the purpose of the legislation. We do not think, and therefore cannot say, that it is oppressive or unreasonable. The order must therefore be affirmed."

Changes Among Prominent Tradesmen.

F. B. Beck has been appointed Connecticut representative of the Pennsylvania Rubber Co., of Jeannette, Pa. Previously he traveled the same State in the interests of the United States Tire

William C. Little, for the past year sales and advertising manager of the Borland-Grannis Co., of Chicago, has resigned that post. He had previous experience with both the Lozier and Rauch & Lang companies.

A. Jackson Marshall has been appointed executive secretary of the Electric Vehicle Association of America, with offices in the United Engineering Society Building in New York City. Marshall is widely known in the Central Station field, but latterly has been representing the General Motors Truck Co. in New Jersey.

William E. Diehl, manager of the Corbin Screw branch in Chicago, has been promoted to the post of factory sales manager, with headquarters at the plant in New Britain, Conn. He succeeds to a portion of the duties laid down by Clarence A. Earl, who resigned the Corbin general management to become vice-president of the Hendee Mfg. Co., of Springfield, Mass.

P. B. Talbott, manager of the Firestone Tire branch in Dallas, Tex., has been transferred to the branch in Cleveland, O., succeeding J. F. Task, who has been made a special representative of the Firestone truck tire department. H. W. McFadden, Houston, Tex., has taken Talbott's place in Dallas, and G. C. Faling, one of the Firestone travelers in Texas, has been promoted to the management of the Houston branch.

Supply and Garageman in Court.

The Auto Supply Co., of New York City, instituted a suit this week in the Supreme Court for New York county against William H. Ash, the proprietor of the Peekskill (N. Y.) Garage: it is charged that between June 11 and October 11, 1913, he was furnished with supplies to the value of \$192.52 and has not paid the bill.



## In SALESROOM and GARAGE



The Antigo (Wis.) Machine & Electric Co. has been formed with a capitalization of \$10,000; it will operate a garage, handle Mitchell and Detroiter cars, build electric motors and pay special attention to machine and repair work. The business is temporarily located in the building on Superior street formerly occupied by the Service Motor Co. The officers of the new company are: President, Charles Ferguson; vice-president, F. J. Swickey; secretary, George A. Zwickey; treasurer, Fred E. Sargent. These and Henry E. Sargent are the incorporators and directors.

G. N. Ramesbotham, as president; L. D. Baggs, as vice-president and treasurer, and F. P. Simme, as secretary, have formed the Motor Mart Repair Co. in Sioux City, Ia., with a capitalization of \$10,000; it has taken over the Bennett Auto Supply Co., which Ramesbotham had been connected with since 1908. Temporarily the location will be in the Motor Mart, but later a new building will be erected. The company will specialize in machine and repair work.

S. B. Friday, formerly of Markesan, Wis., has purchased the equipment and leased for ten years the garage of the Doman Motor Car Co., of Algoma and Bond streets, Oshkosh, Wis. H. C. Doman, the former owner of the business, retires from the trade; S. E. Mikesell and J. R. Doman, who formerly were connected with the company, will handle Jeffery cars, while Friday has secured the Cadillac agency, formerly held by the bankrupt Oshkosh Motor Car Co.

The Chemi Co., which operates a supply store in Richmond, Va., has opened a branch in Norfolk, in the same State, at 723 Granby street; the business was originally started by B. R. Benton ,a chemist, but it took on and featured automobile supplies and last August was incorporated with the following officers: President and treasurer, Mr. Benton; vice-president, O. S. Ogletree; secretary, D. T. Talman.

The Knight Rubber Co., with a capitalization of \$10,000, has been formed to take over the Knight tire agency in Toledo, O., which formerly was a partnership; the officers are: President and treasurer, Orrie E. Starr; vice-president

and secretary, Thomas J. Harris. The latter managed the partnership. Accessories and supplies are to be added and a branch will be opened in Detroit in the spring.

H. W. C. Struebing, who formerly operated a garage in Sheboygan, Wis., at 10th street and Michigan avenue, has purchased the August Prange Garage on North 9th street; he was given immediate possession. Prange will remain with Struebing as a salesman for Ford cars; besides the Ford, Struebing handles Chevrolet, Hudson, Reo and Coey Flver cars.

The Piqua Auto Supply & Sales Co., of Piqua, O., has opened up at 431 No. Main street; the firm members are R. E. Jackson, of Campbell, Jackson & Son; Ray Alexander and W. R. Snyder. The concern has the Haynes and Detroiter agencies, will conduct a garage and vulcanizing business and will stock accessories and supplies.

Emil Burch, E. E. Rhine and V. K. Robinson have formed the Miami (Fla.) Auto Service & Sight Seeing Co. with headquarters in the Hippodrome news stand; the business will consist of a taxicab and sightseeing service. The equipment consists of 20 cars.

J. P. Wooten, of Abilene, Tex., has purchased the Majors Garage at North 2nd and Cypress streets; he will operate it under the style J. P. Wooten & Son, the "son" acting as manager. The stock of supplies and accessories will be increased.

G. A. Lien has sold a half interest in his garage and salesrooms in Columbus, Wis., to Fred Behncke and the firm hereafter will be styled Lien & Behncke: they handle Buick and Chalmers cars and carry a stock of supplies and accessories.

Arthur Schumacher, principal owner of the Delavan Lake Boat & Engine Co., which operates a garage on that lake, is about to establish a garage business in Delevan, Wis. He is having erected a two-story building, 36 x 100

The Sioux City (Ia.) Auto Top Co., which formerly was a branch of the Omaha (Neb.) Auto Top Co., has become an independent corporation; it has been sold to Sioux City men and will be operated independently hereafter.

J. E. Cohagen, of Hedrick, Ia., has taken over the garage business of R. T. McClain & Son in Fairfield, Ia. He has operated a garage in Hedrick and in his new location will also stock Studebaker, White and Buick cars.

E. W. Kirkpatrick and R. A. Parkinson, of Lawton, Okla., have entered the trade under the style Lawton Ford Co. They have the Ford agency and will maintain temporary headquarters in the Snowhill Garage.

Peter Bradbury, Frank H. Bachman and Reuben H. Bachman have formed the Bee Automobile Co. in Allentown, Pa. They have located at 17 North Church street and will make a specialty of body building.

Haley & Sheraton, distributers of the Ford in Snohomish county, Wash., have purchased the business of the Ferrell Auto Co., of Everett, Wash. The purchase includes the Buick and Cadillac agencies.

Jerome Terwilliger & Son, of Clinton, Wis., have opened a garage and salesrooms in the new Terwilliger building on Main street; a complete repair-shop is connected with the gar-

Prothero & McGinnis, of Baraboo, Wis., have leased the Dells Garage, in Kilbourn, Wis., of William Stanton; they will run this and the Baraboo Garage, which they have owned for some time.

Wayne Hasbrouck, of Hazelton, Ia., has sold his interest in the garage and agency business of Hasbrouck & Lahner to Philip Lahner; the latter is now sole owner and will continue the business.

C. L. Coleman has entered the trade in Fargo, N. D., as the Coleman-Cole Co. He has the Cole agency and is located temporarily in the Calkins-Murphy Garage on 2nd avenue north.

Conrad Jenson and C. P. Peterson, of Glenwood City, Wis., have formed a partnership under the style Jenson & Peterson; they will open a garage and will stock Overland cars.

The Erie (Pa.) Taxicab Co., whose building was recently destroyed by fire, is having a new structure erected on 14th street: it formerly was located at 120 West 12th street.

Seward G. Dobbins, of Atlantic City, N. I., has secured plans for a two-story brick, concrete and steel garage, 50 x 150 feet; he will build at 3807-9 Atlantic avenue.

Guy W. and C. W. Campbell, who have conducted a motorcycle agency in Waterloo, Ia., have entered the automobile trade; they have secured the Saxon agency.

J. R. Harris, of Normal, Ill., has sold his half interest in the Normal Garage to his partner, P. E. Herr; Harris has not decided as to his future plans.

J. I. Kellar and J. E. Harris have formed a partnership in Prairie du Chien, Wis. They will operate a garage in the Dousman block on Bluff street.

Spraker & Rapp, who operate a garage in Palatine Bridge, N. Y., have become dealers; they have secured the Ford agency for five towns.

Frank Vogt, of the Dalles, Ore., has awarded the contract for a one-story concrete garage, 100 x 180 feet; the contract price was \$11,977.50.

The Auto Baggage & Transfer Co. has opened up in Tacoma, Wash., at 111 South 8th street; it will operate a motor transportation service.

R. B. Emens, who has been a Ford dealer in Ravenna, Mich., for a year, has closed out his business; he plans to remove to Cuba.

Frank B. Schmidt, of Elkhorn, Wis., has opened a garage; he will remodel the building in the spring, installing a new front.

### Recent Losses by Fire.

Cedarville, Cal.-Wakefield & Jones; garage destroyed. Loss, \$5,000.

Shreveport, La.-Dixie Auto & Welding Co.; garage and 17 cars damaged. Loss, \$33,000.

Quincy, Mass.-Charles W. Miller, Canal street; garage and four trucks damaged. Loss, \$15,000.

New York, N. Y.—Oldsmobile Co., 225 West 58th street; building and contents damaged. Loss, \$5,000.

Milwaukee, Wis .-- W. R. Franzen, Lake drive and Bradford avenue; garage damaged. Loss, \$5,000.

Chicago, Ill.-Overland Motor Co., 2524-28 Wabash avenue; building damaged, contents destroyed. Loss not stated.

Pittsburgh, Pa.-Dean C. Benter, Kelly street; garage damaged and three cars and \$2,000 worth of tires destroyed. Loss not stated.

### MOTOR WORLD

### GARAGEMAN BEGINS WAR ON CHAUFFEURS' "GRAFT"

Boycotted by Drivers Who Demand Commissions, He Appeals to Car Owners — Conditions New York Man Met.

Claiming that the Fifth Avenue Garage, of 57-65 East 88th street, New York City, has been boycotted by certain chauffeurs because they were refused a 10 per cent. commission, A. E. Hutt, the manager, is carrying his case direct to the car owners of upper Fifth avenue with a plain statement of the situation; even the offer of a free barber, a free bootblack and a free pool table would not bring in the chauffeurs; they demanded real cash-a certain percentage of their employers' bills.

The garage has space for 114 cars but thus far has found but 38 customers; its rates are \$30 for a runabout, \$35 for an open car and \$40 for an enclosed car, and gasolene sells at cost-16 cents. The space is all on one floor, there are no elevators, skylights are plentiful and the establishment is well kept, yet, Hutt states, some chauffeurs seem to have found it possible to make unfavorable reports to their emplyoyers on the gar-

It now has simmered down to a longdrawn-out contest between the garage and the chauffeurs; that the garage has not a hopeless task may be gathered from the fact that it is owned by the New York Transportation Co., a large metropolitan taxicab concern. When the garage was opened December 1 numerous applications were received. "There were enough to have filled the garage to overflowing," said Hutt, "but when the chauffeurs found we would not give them a 10 per cent. commission the cars they drove did not come in. We struck this trouble from the start and now have put the matter up to the owners; we have a fine garage and every convenience and are not going to give in, and I don't believe we'll go bankrupt in the effort either.

"Many car owners leave the selection of a garage to the chauffeur, and if he reports unfavorably on a garage it is not patronized. Some owners even tacitly consent to their chauffeurs taking a commission, but I don't suppose they ever consider that the garageman has to take it out of the owner somewhere else. We have a barber and a bootblack for our chauffeurs, working under a free and tipless system. If a chauffeur wants anything, from a shave to a massage, it costs him nothing, and our free pool room keeps a man from spending his money outside.

"But do you suppose that appealed to the 'commission chauffeurs'? One of them said. 'If you buy my shoes and my clothes, it makes no difference; i want to spend my own money."

The letters which have been going out to car owners have brought encouraging responses; invariably, even if a car is not brought in, the owner expresses his sympathy with the garage in its fight. Selling gasolene at cost price is admittedly a loss, but such sales are to those who store in the garage and are a trade inducement.

#### Michelin Cuts: U. S. Tire Adds Miles.

The Michelin Tire Co., which reduced its prices in September last, made another reduction, amounting to approximately 10 per cent., on Monday last. On the most popular size of tire, 34 x 4. the new price of casings is \$28. as against \$30.75, and on tubes \$6.25. as against the former price of \$7.25.

Michelin tires, however, have always ruled slightly higher in price than most of the others, and while the difference is not now so great it still exists, it ranging from 10 to 20 per cent. higher than the December cut made by practically all of the other American tire manufactur-

Michelin's new quotation has not served to alter the situation, the only recent development in other directions being the wiping out by the United States Tire Co. of its special dealers' prices on nobby treads, thereby making its discounts apply to consumers' lists only. This action has not altered prices to the public but means an additional 10 per cent. in favor of the dealer.

The United States Tire Co. has also just placed its nobby treads on a 5,000mile basis of adjustment instead of 3,500 miles, which, except in the case of the Ajax, has heretofore prevailed in the trade, nominally at least.

Mail Carrying Company Owes on Truck

Claiming that \$66,666.37 is unpaid on 65 Garford trucks that were sold to the New York Mail Co., the R. & L. Co. which distributes these trucks in the metropolitan district, filed suit this week in the Supreme Court for New York county. The action, however, is against Herman A. Metz, a former city Comptroller, who backed the Mail company and became involved in its affairs. The New York Mail Co. carried United States mail in New York City.



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### MAKING GOOD-WILL OF REAL VALUE.

Good-will is such an intangible something that it is not easy properly to express it in figures. Of course, when it is desired to sell stock to the public, or otherwise impress the populace, or to make both sides of a ledger balance, nothing is simpler than to reckon good-will as an asset valued at whatever sum fancy or necessity may dictate, whether it is be \$20,000 or \$20,000,000; if need be, it can be carried out and expressed even in odd cents; for none can disprove any valuation that may be fixed.

Good-will, however, is worth only what it will bring in the event of the sale of a particular business, and in order to prevent self-deception and public deception it is becoming the increasing practice to carry it at the nominal book value of \$1. But, despite its intangibility, good-will is of real and potent value. It is one of the foundation stones of business, and he is unfortunate indeed who does not fully appreciate the fact. Much of its value rests with the head of the house, but even the office boy, or the voice at the telephone, can add to its meaning and earning power. When the most is made of it it is easy to win patronage and even easier to hold it.

In the automobile industry, it is not always reckoned at its true value. For instance, great efforts are made to effect sales but the effort to retain the buyer's good-will is not in the same proportion, and this despite the constant repetition of the crv "Service," which does not always mean what it suggests.

That the value of effect of good-will is not recognized when it is seen was recently aptly instanced when one of the proud monuments of the automobile industry was discussed by some of those who envied the position to which the concern involved had attained. There were those who asserted that they could not understand the wonderful hold that this particular manufacturer has on the users of his cars, though quite apart from the real value represented by his product it is the good-will—the good opinion of his customers—that is chiefly responsible, as is known to all familiar with his policy.

While the doctrine, "The customer is always right," may be an underlying factor, it is not wholly so in this case, for servility or abjectness does not enter into the policy, but the manufacturer and all his dealers and salesmen have been imbued with the idea that whoever purchases one of these cars, whether it be new or old, is, so to speak, a member of the family, wherever he may be or wherever he may go. They have come to appreciate that theirs is a community of interest and that their keenest interest in a purchaser begins after the sale is made. The whole organization has been impregnated with the spirit that while meeting a man in the right way is well enough, it is far better to treat him right after he has been met and made a customer.

In the last analysis, the policy is merely the old one arising from the unquestionable truth that a satisfied customer is the best advertisement—a policy often exploited but as often more honored in the breach than in the observance.

There is no patent on the method; it is available to all, both manufacturer and retailer, who desire to increase their good-will accounts and not only hold their trade with a grasp that practically knows no breaking, but to attract to themselves with a minimum of effort the always desirable "new business."

### PROFITABLE SIDE OF ACCIDENTS.

The now well developed business of organizing associations for the purpose of giving the organizer a salaried job and thereby conserving, let us say, the public safety has evidently aroused the green-eyed monster. At any rate, the so-called National Highways Protective Society, of New York, which heretofore has had almost a monopoly of the business, is now to have keen competition. The Society for the Conservation of Human Life, the Association for the Prevention of Reckless Driving and the Safety First Society all have entered the arena. And why not? Competition is the life of trade; and what trade is more popular than the exploitation of automobile accidents and the harrying of motorists? It pays men who "need the money," and as a means of gratuitiously advertising lawyers or doctors there's nothing better.

# WHEN HUSBAND DOES NOT SHARE WIFE'S LIABILITY

May be Responsible for Shopping
Bills but Not for Her Automobile Accidents—New York
Court's Dictum.

The husband may be liable for the bills his wife runs up, but he is not liable for damages if she takes his car out and runs over a pedestrian; she is obliged to pay the bill if she has any money, but at any rate, no liability attaches to the husband, according to a decision rendered this week in the Appellate Division of the New York Supreme Court, First Department, in a suit brought by Helen H. Tanzer against Henry P. Read and his wife, Ella L. Read.

The point involved is that while the husband is obliged to take necessary care of his wife he is not compelled by law to furnish her with means of pleasure, which the car was held to be in this case. The lower court gave judgment against both husband and wife, but the Appellate Division reversed it as against the husband.

"The important question," said the court, "is as to the husband's liability. The injuries were caused by an automobile belonging to the husband, which had been purchasesd by him for the mutual pleasure of himself and his family, including his wife, who was privileged to use the same.

"The husband had provided a chauffeur for the operation of the car and at the time of the accident this chauffeur was in the car, but he had shortly before the accident given up the wheel to the wife, who alone was operating the car when the accident occurred. The use of the car on the occasion in question was purely for the wife's recreation and not on any business of the husband. In Quilty v. Battie (135 N. Y., 201, 207), referring to the legal status of husband and wife and the effect of the statutes of this State modifying the common law in that regard, the Court of Appeals said:

"'The husband is still the head of the family—the master of the house. He is entitled to the help and companionship of the wife, the control and discipline of his children and the regulation of the domestic affairs of the household. . . All such conjugal rights are unimpaired.' I know of no law, however, which compels a husband to afford to his wife either the opportunity or means for rec-



Feb. 7-14, Cincinnati, O.—Automobile Trade Association's show in Union Central Life Building.

Feb. 9-14, Portland, Me.—Show in City Hall Auditorium.

Feb. 9-14, Buffalo, N. Y.—Buffalo Automobile Dealers' Association's commercial vehicle show.

Feb. 9-14, Grand Rapids, Mich.—Fifth annual Western Michigan show.

Feb. 11-14, Louisville, Ky.—Louisville Automobile Dealers' Association's show in the Armory.

Feb. 14-21, Pittsburgh, Pa.—Pittsburgh Automobile Show Association's show in Exposition Hall.

Feb. 16-21, Kansas City, Mo.—Annual show.

Feb. 16-21, Toronto, Ont.—Toronto Automobile Trade Association's 10th annual show in Transportation and Horticultural Buildings.

Feb. 16-23, Memphis, Tenn.—Automobile Association of Memphis's show.

Feb. 17-20, Sioux Falls, S. D.—Sioux Falls Automobile Dealers' Association's second annual show in the Auditorium.

Feb. 17-21, Salt Lake City, Utah—Annual show in the Keith-O'Brien building.

Feb. 18-21, Bloomington, Ill.—McLean County Automobile Club's show.

Feb. 18-21, Easton, Pa.—Automobile show under auspices of Company I. 13th Infantry, N. G. P., in the Armory.

March 18-22, Sharon, Pa.—Dealers' Association's show in the Armory.

Feb. 23-28, Danville, Ill.—Vermillion County show in the Coliseum.

Feb. 18-25, Albany, N. Y.—Albany Automobile Dealers' Association's pleasure vehicle show in the Armory.

Feb. 21-28, Newark, N. J.—New Jersey Automobile Trade Co.'s show.

Feb. 21, Los Angeles, Cal.—Vanderbilt road race under auspices of the Western Automobile Association over Santa Monica course.

Feb. 21-March 4, Cincinnati, O.—Automobile Dealers' Association's show in the Music Hall.

Feb. 22-March 1, Hartford Conn.— Hartford Automobile Dealers' Association's show in Park Casino.

Feb. 23, Los Angeles, Cal.—Grand Prize road race under auspices of Western Automobile Association over Santa Monica course,

Feb. 23-25, Albany, N. Y.—Albany Automobile Dealers' Association's commercial vehicle show in the Armory.

Feb. 23-28, Omaha, Neb.—Omaha Automobile Show Association's show.

Feb. 24-28, Syracuse, N. Y.—Syracuse Automobile Dealers' Association's sixth annual show in State Armory.

March 2, 3, 4, Cincinnati, O.—Automobile Dealers' Association's commercial vehicle show in Music Hall.

March 2-7, Utica, N. Y.—Utica Automobile Club's automobile show in the State Armory.

March 3-6, Grand Forks, N. D.-Fifth annual show in the Auditorium.

March 3-7, Fort Dodge, la.—Fort Dodge Dealers' Association's third annual show in the State Armory.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics' Building.

March 9-14, Des Moines, Ia.—Automobile Dealers' Association's annual show.

March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics' Building.

March 21-28, St. John, N. B.—New Brunswick Automobile Association's Maritime show in the Armoury.

April 9-15, Manchester, N. H.-Automobile show.

reation, but if he does so, I do not think that while engaged in such recreation she is in any sense acting as her husband's agent, even though she utilize his property as a means for her pleasure.

"Section 57 of the Domestic Relations Law provides that 'she is liable for her wrongful or tortuous acts; her husband is not liable for such acts unless they were done by his actual coercion or instigation, and such coercion or instigation shall not be presumed but must be proved.' When a wife commits a tort while independently engaged in pursuing her own pleasure. I think the husband is protected by the statute, and for this reason the motion made in the husband's behalf at the conclusion of the plaintiff's case to dismiss the complaint as to him should have been granted.

"As to Mrs. Read, the judgment and order should be affirmed; as to the defendant, Henry P. Read, the judgment is reversed and the complaint dismissed."

### MOTOR WORLD

# WELL-FILLED LISTS FOR AMERICAN ROAD CLASSICS

Sixteen Drivers "Sign up" for the Vanderbilt and 18 for Grand Prize—The Pilots and the Cars They Will Drive.

California ought to furnish some mighty good racing within the next couple of weeks. And if it doesn't it won't be the fault of those who have had charge of the entry lists for the Vanderbilt Cup and the Grand Prize races, for they have garnered pretty nearly every well-known racing driver still young enough to handle a steering wheel and clean his own goggles.

Before the entry lists half closed on Monday, 9th inst., 16 drivers had "signed up" for the Vanderbilt, and 18 had attached their official signatures to entry blanks for the Grand Prize. So even if no one else is lured by the rich prizes into handing in an entry blank before the 16th, when a double lock goes on the list, there are plenty of drivers and plenty of cars and plenty of experience back of them to make the old Santa Monica course fairly sizzle. The complete list to date is as follows:

### Vanderbilt Cup.

Driver and car.
Harry Grant, Isotta-Fraschini.
Spencer Wishart, Mercer.
Gil Anderson, Stutz.
Edward Pullen, Mercer.
Omar Toft, Delage.
Dave Lewis, Mason.
Barney Oldfield, Mercer.
Earle Cooper, Stutz.
Frank Verbeck, Fiat.
Wm. Carlson, Mason.
Frank Goode, Apperson.
Ralph De Palma, Mercedes.
J. B. Marquis, Sunbeam.
Guy Ball, Marmon.
Guo Goerimann, Touraine.
Tony Jenette, Alco.

### Grand Prize.

Theo. Tetzlaff, Fiat.
Spencer Wishart. Mercer.
Gil Anderson, Stutz.
Edward Pullen, Mercer.
Omar Toft, Delage.
Wm. Taylor, Alco.
Barney Oldfield, Mercer.
Earle Cooper, Stutz.
Huntley L. Gordon, Mercer.
Harry Grant, Isotta-Fraschini.
Frank Goode, Apperson.
Ralph De Palma, Mercedes.\*
J. B. Marquis, Sunbeam.
Chas. Muth, Marmon.
Dave Lewis, Fiat.
Guy Ball, Marmon.
Frank Verbeck, Fiat.
Tony Jenette, Alco.

Of the 18 drivers who have entered for the Grand Prize race, all but Tetzlaff, Taylor, Gordon and Muth will drive first in the Vanderbilt, which, as originally scheduled, is to be run off on Saturday, February 21st, though not all of them will drive the same cars in both races. Lewis, who is scheduled to drive a Mason in the Vanderbilt, will drive a Fiat in the Grand Prize, two days later. Neither Carlson nor Goerimann, who are to drive in the Vanderbilt, will start in the Grand Prize.

Both races, as already is fairly well known, are to be run over the justly celebrated Santa Monica course—8.401 miles of smoothly rolled, hard boulevard—the Vanderbilt going for 35 laps, or 294.035 miles, and the Grand Prize going 48 laps, or 402.248 miles. And if the course itself, and the California climate, do not bring out all there is in the cars and the drivers, the prizes should do so.

For the winner of the Vanderbilt there is the Vanderbilt cup, which is enough for glory, to say nothing of \$3,000 in coin of the realm; second man gets \$2,000, third \$1,500 and fourth \$1,000. Add to which the Bosch magneto Co. has as usual put up a few "incidentals," by way of encouraging the use of Bosch equipment. If the winner of the Vanderbilt drives a car sparked with a Bosch magneto, his purse will be \$300 bigger, and if it has Bosch plugs, too, \$100 more is added; on the same basis, the second man to cross the line with a Bosch magneto under his hood will land \$150 addititonal, with another \$100 for Bosch plugs; the third man who is Bosch sparked has \$100 added for his magneto and \$100 more if his plugs are Bosch.

In the Grand Prize the prizes are even larger, the winner taking, in addition to the Gold Challenge Cup, which is valued at \$5,000, \$3,000 in cash, with \$500 from the Bosch company for Bosch magneto, and \$100 more for Bosch plugs; the second and third and fourth men will receive exactly the same prizes as are offered for the second, third and fourth places in the Vanderbilt.

As has been the case since the year 1910, the Vanderbilt is virtually a free-for-all with the piston displacement limit set at 600 cubic inches and the minimum weight at 1,600 pounds. Prior to 1910 it was run in two divisions, one for cars having between 301 and 450 inches displacement and the other for cars in the 451-600-inch class. The Grand Prize, of course, is a free-for-all, as it always has been, the only limitations being that the overall width of the car must not exceed 6 feet 2 inches.

Quite as a matter of course, Fred J. Wagner is to be the starter and the rest of the list of officials who have been chosen is as follows: Referee—George

P. Bullard, Attorney-General of Arizona; judges—A. B. Daniels, of Los Angeles, C. H. Cobb, of Fresno, and John F. McLain, of San Francisco; chief scorer—E. W. Leslie, of Los Angeles; technical committee—W. E. Bush, C. J. Smith, F. W. Young, all of Los Angeles. Both races are being promoted by the Santa Monica Bay Chamber of Commerce under the management of the Western Automobile Association.

### Well-Known Men in Queer Vehicle.

To manufacture and market an altogether unusual type of two-wheeled motor vehicle styled Autoped, Sanford J. Wise, who is the Metropolitan distributer for Touraine and Paige-Detroit cars, and Hugo C. Gibson, a British engineer at one time prominently identified with the Selden patent litigation, together with W. H. Hurlburt and Reid G. Haviland, have formed the Autoped Co. of America, with offices at 569 Fifth avenue, New York. Gibson is president, Hurlburt vice-president, Wise secretary and Haviland treasurer.

The vehicle itself is Gibson's invention and bears strong resemblance to one which flashed across the European horizon several years ago. In its simplest aspect it is little more than a motor skate with two small pneumattc-tired wheels carrying a platform upon which the operator stands. Motor power is furnished by a miniature air-cooled gasolene engine which is geared to the front wheel and controlled by means of a long handle which also serves to steady the rider on his platform. The fuel supply also is carried in the handle and is sufficient for approximately 100 miles. The machine weighs but 40 pounds and is said to be capable of 25 miles an hour over ordinary roads.

### Speedway Acquires Electric Timer.

By way of making sure of the use of the apparatus for future contests, the Indianapolis Motor Speedway authorities have purchased the electric timing device which has been used since the Speedway was built. The step has been taken to forestall the possibility of the apparatus falling into other hands and to obviate any difficulty which might arise in obtaining it; the consideration paid for it has not been divulged.

### Sparks Honored by Fellow Townsmen.

William Sparks, of the Sparks-Withington Co., has been elected president of the Chamber of Commerce of Jackson, Mich. As the honor was conferred upon him during his absence, it is evident that the office sought the man.



### REPAIRMEN WHO LOSE-WHY

Workmen Draw Good Wages, Customers Are Well-to-do, Yet Many Shops
Are Inefficient—Time Losses
as One Big Leak.

Is there any excuse for the inefficient garage repair-shop? Is there any room for it? Has it any right to existence at all? How can it possibly hope to make any money?

The basis, the fundamental reason for the being of a garage repair-shop is that it may do repair work. That means it must have good mechanics; there is absolutely no use wasting time and money on poor ones. Everyone will at once agree with this, and yet on every hand are heard complaints of garage repair-shop inefficiencies—and they are far from being made out of whole cloth.

### What Makes Repair Profits Small.

People complain that they have to pay two prices for the work and then it is not well done. The garage repair-shop proprietor says to his friends: "There is no money in it; honestly, I lose money on almost every job; if it wasn't for the money I make on garaging cars and selling gasolene and supplies I would go broke." Perhaps he would; and yet, the fact remains that in no other business do mechanics draw better wages and in very few other businesses do repairmen admit that there is no money in making repairs. There must be some wrong features about a business that apparently runs so large in volume and so small in net profits. What is it? Can it be remedied?

To a student of business efficiency who has had experience with many garages there are two obvious reasons why net profits on repairs are so small. One of these reasons is that there is a very large amount of carelessnes and slack-

ness in keeping track of the time put on jobs. The other reason is that troubles are not carefully diagnosed-guesswork is often the substitute for headwork and knowledge. Three men in a shop will diagnose the same symptom in three different ways. Recently a car was brought into a shop where all the mechanics were formerly factory-employed (Note: It is not claimed they were factory trained, for few, if any, factories actually train their men) and had worked for years on the particular car referred to. There was a slight knock in the cylinders. What was it? The car had been overhauled by these same men about thirty days before.

### Much Labor that Had no Result.

What caused the noise? One said it was a piston slap; the second said it was loose tappets; the third said it was loose bearings. They knew the motor thoroughly and only three or four weeks before had put in new bearings and new piston rings throughout. The loose bearing diagnosis was accepted. They agreed to make good on their job. They tore down that motor three different times before they discovered what was the matter. They put in over 90 hours of labor on it, for which they did not receive a single penny. They kept the car for four weeks while they monkeyed with it, and when they finally turned it over to the owner he made up his mind that it was the last time he would ever darken the doors of that repair-shop. It could not be said that these men were incompetents; they were highly recommended by the factory; they had done good work-but their average diagnosis was poor-and they did not keep track of time as if it were money-as it really is.

The incident related is only an example; it could have happened in many shops; wages would have been paid just the same; overhead would have cost just as much; and if such things occurred more or less frequently, what chance would the owner have to win out? The suggestions are closer supervision of time recording and time spent and more careful and accurate diagnosis of troubles before putting mechanics on the iob.

### ATTRACTING ATTENTION TO A TIRE STORE'S WINODW

The Firestone Tire & Rubber Co.'s Detroit branch scores again for having an interesting and intelligent window display.

There is so much that is fascinating about tires and the rubber business in general that it is strange there are not a greater number of interesting displays. Most efforts consist of several tires piled in a window and left there, to be changed only when the stock is needed for consumption. Add a few cards advertising a football game, a concert of a tango party and you have the regular formula for decorating the window of a live store.

The Firestone display referred to takes cognizance of the fact that the public is keenly interested and knows very little about rubber, its production and manufacture. Accordingly in the window is grouped a live rubber plant, some specimens of the wood from a rubber tree, samples of crude rubber, specimens of rubber in various elementary manufactured forms "from tree to tire." all effectively grouped and explained by means of neatly lettered cards. As an educational exhibit it is exceedingly worth while and has attracted a great deal of attention. From a sales standpoint it is effective because it lends interest to the windows, and anything that lends interest to the windows and keeps the public in the attitude of looking for something interesting is bound to make business.



### STANDING PAT ON THE PRICE

Real Salesman One Who Gets the List
Figure—Necessity of Making Concessions to Buyer Declared
a Great Fallacy.

What is the real test of salesmanship? There are several possible answers to the question, but the one that comes nearest to hitting the nail squarely on the head, according to Harold A. Holmes, who expiates upon the fallacy and futility of price-cutting methods in the Caxton magazine, is the ability to get the price.

"If you have confidence in the concern you work for and in the goods which you sell, there is no reason why you shouldn't stand pat on the price," he says. "I have known salesmen who could make an admirable presentation; they could show their goods to the best possible advantage and hold the attention of the prospective customer up to the point where he asked for the price, and right here they always fell down.

### Falling Down at the Price Mark.

"They name the price in a faltering way as if they were ashamed of it, and with their nerve rapidly oozing away suggest that the price is low. Sometimes, to make matters even worse, the salesman will suggest that his house does not authorize him to cut the price. This suggestion arouses a suspicion in the mind of the prospective buyer that there is more than one price.

"The buyer is always actuated by one motive—to get the best price possible. The salesman who names his price in a hesitating manner is always on the defensive side, because he has opened up the way for the buyer to 'beat down.' Any supernumerary can dispose of goods if he permits the buyer to dictate the terms, but it takes a real salesman

to defend his employer's right to a legitimate profit. Your firm puts a just valuation upon its goods—if you submit to the buyer who ignores the valuation and presumes to say what the goods shall sell for, you are cheapening the goods and reflecting discredit on your employer.

### Haggling Sure Way Not to Make Sale.

"The salesman who permits himself to haggle with the price is lost. The buyer recognizes him as a putty man that he can pinch into any mould that he chooses. When a buyer suggests that he might buy some of your goods if you would cut the price, it is just the time for you to stand pat. By showing your independence you give the best proof that your line has the best merits you claim for it. By letting a man see that you don't have 'to meet his figure' you convince him that plenty of others are meeting yours. There never was a bigger fallacy than the notion that a salesman can't get along without occasional concessions to buyers."

### GET UP AND GREET CALLER AS SOON AS HE OPENS DOOR

Jump up the minute a stranger enters your store. It is natural courtesy. It is the polite thing to do, and therefore the right thing to do. And like most right things, it cannot but lead to better business. It makes a hit with the stranger who may be a "looker" or a "buyer," it does not matter which, as in the hands of a good salesman one is about as easily cashable as the other.

A man who is accustomed to attention is likely to have the money to command it. He expects instant attention, and lack of it will probably drive him elsewhere. On the other hands, the person who is not accustomed to such polite recognition appreciates it doubly. It creates a wonderfully pleasing impression.

Some people who are supposed to be salesmen and "on the floor to look after the sales" act as if they were chagrined at being disturbed and wait for someone else to beat them to it before they hesitatingly arise and go forward. That is the way to drive out a possible customer. You have made a bad first impression and created resistance which it is going to take a lot of hard work to overcome. Resistance may take the form of "Thank you very much for showing us the carwe are just looking now-will see you later," and away goes the poor salesman back to his desk feeling "I told you sojust lookers," when in reality they intended to buy all the time.

#### The Dealer Who Enthused Backwards.

A case of this kind happened in a Western city not long ago. The offender who reluctantly waited on the couple was one of the joint proprietors. He did not grow enthusiastic and neither did they. He was much more interested two or three days later when the "lookers" whizzed by in the car of a competitor, but it was too late. The competitor sold them a car. He is now a "quick riser."

### Make the New Year a Good One.

Just thinking that the new year is going to be a big one will not make it so. That will help. But the next move is to lay your plans to make it so; and then get on your toes and make everybody else in your place get "on their toes"—and hustle.

### Putting Off That Call Till Tomorrow.

The fact that you were planning to call on the man the next day doesn't help you a particle when you learn he has bought a car from someone else. It pays better to be on the job the day before than the day after.

### STIMULATING TRADE WHEN IT IS "SAGGING"

# Overcoming the Sales Lethargy Which Is Prone to Follow the Excitement of Show Week—Detroit Dealer Who Compelled Attention and Booked Sales By Adapting and Exploiting a Salon.

Immediately after the local automobile show is a period when sales lag. Interest languishes; salesmen grow indifferent; they have been keyed up to high pitch, then they sag. Prospects all want to "put off." It seems as if nothing could be done to awaken interest. But one dealer discovered that something could be done to keep up interest, make sales and literally "cash in" on the shows. The careful reading of this story may suggest ways and means that will enable other dealers to enthuse their salesmen and bring across many sales that would be otherwise deferred-perhaps lost .- Editor.

After the local automobile show. what? This is a question that has puzzled many dealers in automobiles. Snow is usually on the ground, the weather is cold and often disagreeable. The public has been worked up to a high point of interest, salesmen have been keeping late hours and the natural tendency is to rest up before again resuming the regular grind. With much local advertising and many other expenses incidental to the show, and often very few real sales, the dealer is apt to sit down and figure it over without getting very much farther than the realization that he has been through something pretty strenuous that has cost a good deal of money.

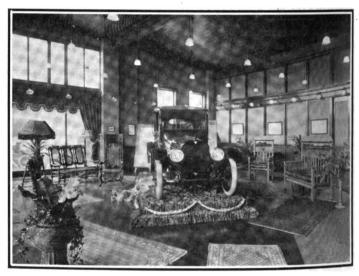
### Planning to "Cash in" on Show.

There usually is no place at the show where a dealer can take a customer and sit down and get the signed order and the deposit, and the customer does not come with that object in view. He has come to look over the field and he looks them over and goes away. Perhaps he has told the dealer that he will "see you next week"; but, when "next week" comes and the salesman calls on him he says he is "too busy now; there's no hurry; drop in in about six weeks."

The salesman chases under this condition. He wonders vaguely if there is not some remedy. He himself does not feel very good, and it seems as if making calls during that period were well-nigh a waste of time.

The Bemb-Robinson Co., which sells Hudson cars in Detroit, had been through several shows and always this condition confronted them immediately afterward. They felt that the enthusiasm created at the shows ought to be kept up and converted into orders. Each year as they left the show they had felt as if they would surely sell fifteen or twenty cars the week immediately after

to get real results from a local show. We figured that if we could devise a scheme that would enable us to secure the attention of our prospects immediately after the show and get them into our sales room we could make some



BEMB-ROBINSON SALESROOM CONVERTED INTO A FRENCH SALON

the show, but just as regularly as clockwork they were disappointed. It seemed to them as they went over the matter that something could and should be done to alter this condition. It did not seem right; they knew it was highly unprofitable. How could they literally "cash in" on the show?

They evolved a plan and they put it into execution the Monday following the Detroit show. This is the story of their plan and how it worked. Incidentally, it came right while the Chicago show was in progress. It goes to prove that no matter how great may be other attractions. if you put your heart, soul and brains into a proposition you can make good on it.

"This is the most elaborate undertaking we have been through so far," said Robinson in discussing it, "but in every sense it has been a practical and profitable investment. How did we come to do it? Well, you know how hard it is

"Mr. Bemb is responsible for outlining the plan and contributed most of the ideas," modestly continued Robinson. "You are already familiar with the success of our other plans along this line and you can imagine it was not so very hard to carry out the details of this undertaking, once we had determined in our minds exactly the nature of the thing we proposed to do. You can see from the view in front of you what we did and these photographs may make it even plainer.

### How Prospects Were Brought In.

"You will grasp at once that we had to have something special to get people down here. The Hudson Cabriolet had just come from the factory. It was the only thing in the line that we had not already featured, so we determined to make that the central feature of our display. We invited everybody whom we regarded as a likely prospect to visit

our store to see the new cabriolet. This stirred curiosity. Then our previous displays made them curious to see what next. We dressed up the store in unusual form so that we had a special reason to offer them for coming down to see us the particular time we wanted them to come.

"The general idea behind our decorations was that of a French salon. The only permanent investment we made was for the curtains in the front window. The other 'properties' we borrowed or rented. The total expense did not exceed \$300. A good deal of money? Yes; but we find that you cannot do anything worth while without spending a little

ment that we would send a Hudson Sedan after them would usually mean an acceptance.

"A great many men brought their wives. Just imagine the effect on the ladies. Surprise and then delight and none of that 'Hurry up, John, please!' just as we had succeeded in getting John down to brass tacks and were on the point of closing him up. Instead, after they had looked over the trimmings and finish and other details in which they were interested, one of our other salesmen was sure to be introduced to the wife and he took her over to view the rugs, and lamps, and other furniture that made up the room. Perhaps they went

note there are ten, are all imported. The furniture over there is true Jacobean period furniture. The lamps are correct. The old English furniture blends with it. The flowers add grace and beauty and everything about the salon appeals to the love of beauty inherent in every woman.

"What was the result? Put it this way: Instead of a stiff-backed, archednecked attitude, the women felt at ease. That was something worth while. Instead of the usual uncomfortable 'shopping spirit' that seems to be common to most husbands and wives—each of them on edge—there was real phoyment. Naturally, the chairs group themselves in a circle about the car. That, of course, means attention on the principal feature. Then, over in the corner there is a screen. Behind that there is a desk. We made it as easy as possible for the buyers to sign orders.

#### Method That Sold Twenty-three Cars.

"What did we get in actual results? Orders for ten cars the first week; orders for thirteen cars the second week-and this at a time when business is supposed to be bad and everybody expects it to be poor. Of course, we don't say the salon-salesroom did it all, but we believe it had a great deal to do with it. We do not know how we could have gotten the people here without it. We do know it has been a subject of talk among people all over Detroit, and we regard it as in every way the best and most productive merchandising idea that we have yet carried out. One of the most remarkable results was the amazing inspiration this affair gave to our salesmen.

"What did we have in the way of furniture? First, there was the dais of green velvet on which we showed the cabriolet. There were ten Turkish rugs, five lamps, six stands of flowers, a leopard skin, a tiger skin, a lion skin and a bear skin, and seven chairs. This with the curtains I mentioned before gives you a complete list of the stage properties."

### Fellow Dealers Give Block a Clock.

Louis C. Block, manager of the Ford branch in Philadelphia, is one of the few men in the industry who is not only appreciated by his rivals but has evidence to prove it. The evidence takes the form of a large "grandfather's" clock which was presented to him last week by his associates in the Philadelphia Automobile Trade Association, the presidency of which he recently resigned.



ANOTHER VIEW OF THE SALON AND THE CENTRAL FEATURE

money. It has already come back to us.

"Why did we select a salon ensemble? There were several reasons. The principal one was that we wanted any of the ladies who came down with their husbands to feel perfectly at home. We wanted them to feel pleased, interested, and at ease. Our invitations, which were sent out on special embossed stationery, invited them to a 'private exhibit of the latest Hudson creations at the Hudson Salon,' Jefferson avenue. This wording added interest and 'class.' Each of the invitations was specially typewritten like a personal letter. Five hundred of them were sent out. And immediately after we opened up on Monday people began coming in.

"All our salesmen were on duty during the entire time. To many of our prospects they extended personal invitations over the telephone, and to those who were inclined to put off, a stateover to one of the chairs and sat down and talked about the latest 'Thé Dansant' or the theater or something else. Whatever it was, one looking down on the brilliant scene night after night could not help but feel as he listened to the peals of silvery laughter and saw the soft, subdued lights and artistic furniture that the ladies were really enjoying themselves.

### Making the Ladies "At Home."

"This salon effect was emphasized by the neat appearance of our salesmen, all of whom were properly attired. Occasionally — indeed, very often — friends would meet and then the ladies would get together and talk the whole thing over. It made a hit. It created an impression. It gave the store real 'atmosphere.'

"Shortly before we opened up each evening, a little Chinese incense was burned. These rugs, of which you will

# BUFFALO'S SECOND WEEK DEVOTED TO COMMERCIALS

Crowds at Truck Show Scarcely Smaller Than Those the Previous Week—Canaries Feature of Decorations.

Under a star-studded "sky" of blue bunting that did duty the week previous for Buffalo's 12th annual pleasure vehicle show, the Buffalo (N. Y.) Automobile Dealers' Association opened the second section of its show, devoted exclusively to commercial vehicles, on Monday night, 9th inst. For the first part of the show, which held the boards in Broadway Auditorium for just one week, there were close to 250 separate exhibits, and there are scarcely less for the truck section which will draw to a close on Saturday night, 14th inst.

In making beautiful the ordinarily bare building that houses the show, the dealers' association adopted a scheme quite out of the ordinary, for in addition to the "sky" and the tungsten "stars" and the bunting drapery, there are hundreds of tropical palms and in each palm there are two twinkling lights and a half-concealed cage holding a warbling canary. And if the beautiful decorations and the cars and the horde of accessories were not responsible for the size of the crowds that filled the building at every session, the possibility of one lucky ticket holder winning a car likely did so. At the pleasure car section, the dealers who displayed their wares were:

Hurd & Landschaft; Klepfer Bros.; Monroe Motor Co.; Buffalo Electric Vehicle Co.; Buick Motor Co.; Kane-Cadillac Co.; Louis Engel, Jr.; Mason B. Hatch, Inc.; Ralph E. Brown Motor Car Co.; Joe Rath; Cole Motor Co.; H. H. Hall; George Ostendorf; John J. Gibson Co.; Ford Motor Co.; Overland-Buffalo Co.; Buffalo-Hudson Sales Co.; Brunn Carriage Mfg. Co.; F. A. Ballou Co.; J. A. Cramer; Krit Motor Co.; Cyclecar Sales Co.; Poppenberg Motor Co.; Meyer Motor Car Co.; National Motor Car Co.; Oakland Distributing Co.; Packard Motor Car Co.; Paige-Buffalo Co.; Pierce-Arrow Sales Co.; Lutz Automobile Co.; A. W. Haile Motor Co.; Mutual Motor Car Co.

The exhibitors at the commercial vehicle section are as follows:

Peerless Motor Specialty Co.; Jaynes Auto Supply Co.; Pyrene Manufacturing Co.; Cramp & Winslow; Weiss & Miller; American Kushion Kore Tire Co., Inc.; Atterbury Motor Car Co.; Brockway Motor Truck Co.; Buffalo Electric Vehicle Co.; J. A. Cramer; Driggs-Seabury Corporation; John J. Gibson Co.; A. W. Haile Motor Co.; International Harvester Co.; Ivey Motor Truck Co.; Iroquois Rubber Co.; Keystone Lubricating Co.; Lippard-Stewart Motor Truck Co.; Little Giant Sales Co.; Lutz Auto Co.; Meyer Motor Car Co.; Meyers Bros.; Mutual Motor Car Co.; Overland-Buffalo Co.; Packard Motor Car Co.: Pierce-Arrow Motor Car Co.; Poppenberg Automobile Co.; Sanderson-Burghardt Co.; L. G. Schoepflin Co.; Seeber & Hofhein (motorcycles); Stewart Motor Corporation; Tiffin Wagon Co.; The Velie Motor Sales Co.; R. E. Brown Motor Co.

### Tire Removing Tool from St. Paul.

The struggles that often are necessary to get a tire off a rim have impelled the Holden Mfg. Co., of St. Paul, Minn., to add another tire tool to the list of such



HOLDEN TIRE TOOL

things already on the market. The appliance, which is shown in the accompanying illustration so plainly that anyone who has wrestled with a tire will see how it operates, has a wide, dull edge that comes against the bead rubber and will not injure it. By swinging the handle until it has passed the dead center it will lock and hold the bead away from the flange and so facilitate its removal. The tool shown is finished in aluminum, weighs two pounds, will handle tires from 31/2 to 5 inches and costs \$1.25. A smaller model is made especially for Ford cars or any others with 3 or 3½-inch tires, and the price is 95 cents.

### Spring Tire Bobs up in Timberville.

Timberville, Va., may not be a very large dot on the map, but at least four of its residents believe that the muchinvented spring wheel is worth at least \$1,000,000. At any rate, they have incorporated the Fahrney Wheel Corporation and capitalized it at that amount. The company will have its habitat in Harrisonburg, Va., which is somewhat larger than Timberville. The wheel which will be exploited is the invention of J. J. Fahrney, who is president of the company; the other officers, all of whom are natives of Timberville, are: Cornelius Driver, vice-president; J. W. Grim, secretary, and E. M. Minnick, treasurer.

### WOULDN'T SELL HIM CHAIN TO MEND HIS TIRE GRIPS

Trade That Is Turned Away for Fear of Patent Laws—Hardware Dealer Once Bitten
Was Permanently Shy.

The cut of his coat, the rake of his cap, and his general get-up clearly indicated that he was a chauffeur, and, further, he bought a couple of spark plugs and a roll of tape before he began looking at steel chains.

"What's the price of that chain?" he asked finally.

The hardware man told him. "Gimme twelve feet."

The salesman cut off the desired length and was about to work it into a bundle when the chauffeur interrupted.

"Say! You got a cutter there; why can't you cut up that chain for me? I gotta cut it up into short lengths."

"Short lengths?" queried the salesman, sharply. "What are you going to do with it?"

The chauffeur evidently didn't like the tone. "I'm going to use it," he said. "'Tain't anybody's business what for."

"Are you going to use it for tire chains?"

"What difference does it make to you what I am going to use it for? Is it any business of yours?"

"It's no business of mine unless you're going to make tire chains out of it. Is that what you're going to do?"

"Well, what if I am? I'll cut it up myself if you don't want to."

"That's not the trouble," replied the salesman, picking up the chain. "I don't care a hang what you do with the chain and I'd just as soon cut it up for you—so long as you don't make tire chains out of it. But if you're going to do that, why, nothing doing!" and he chucked the chain back into the bin. "It's against the law," he continued. "If you read the automobile papers you ought to know that you can't monkey with the Weed patents. We know it, anyway. I'm sorry; if you wanted a mile of chain cut up for dog-chains you could have it, but for tire chains—nit!"

"Hell of a way to run a business!" muttered the chauffeur, retreating without his chain.

"Lots of them do that," said the salesman to the next customer. "If a man just wants to buy chain, of course it's none of my business; but if he says he's going to make tire chains of it, I can't sell it to him."

### GETTING CUSTOMER TO DISCLOSE HIS GROUCH

### Reilly Gathers Testimonial Letters But Makes Them Serve a Greater Purpose Than Advertising—Provides a Contact With Car Owner and Uncovers Many a Hidden and Cherished "Sore" Spot.

Reilly read one letter and passed it over to the Sales Manager; the latter, seated beside the desk on which was the dealer's afternoon mail, nodded approval as he read. Reilly read and passed on

"One reason is that when I ask for a letter I ask for a testimonial of service as well as of the car, and when an owner says Reilly gives good service and sells a good car it seems to me a bit too localized to be of much value in the factory's national advertising. Another reason is that I never happened to think of it and you never asked me for them."

"Are they much good to you? Do

"As pure testimonial advertising they

are of value; that cannot be denied,"

they really amount to much?"

ager. "Do you mean to say you're looking for kicks from your owners?'

"Sad, but true," replied Reilly. "It's kicks I'm looking for and I get a few now and then."

"Well, tell me, what good are kicks?" "Good to straighten out; didn't you just see me give Charley one to take care of?"

"Yes, I guess I did."



"The whole testimonial scheme has proved valuable to me," added Reilly, "and I wouldn't give it up for anything. Anyone knows how testimonials may be used in advertising, in booklets, newspaper copy, folders and such stuff, but the complaints that come in in this way and the facilities the scheme affords for keeping in touch with our owners is of eyen greater value."

"How so?"

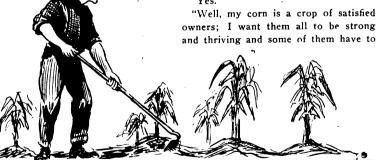
"Well, you yourself know that a man who starts a young crop of corn can't make the weak hills keep up with the better ones unless he gets out and nurses the weak ones along with a

"Yes."

"And he can't tell which ones to nurse along unless he goes out and looks them all over."

"Yes."

"Well, my corn is a crop of satisfied owners; I want them all to be strong



"A MAN CAN'T MAKE THE WEAK HILLS KEEP UP UNLESS HE NURSES THEM"

"ANOTHER GROUCH," SAID REILLY, "GO UP AND GIVE HIM A LOOK ONCE"

to another, and was part way through the third when Charley, the salesman who had helped make the name of Reilly known in the town, walked in.

"Oh, Charley!" Reilly held up the let-

The salesman made a right-angled turn in his course across the office and took the letter.

"Another grouch, that's all," said Reilly. "Go up and give him a look once."

### On the Trail of Man With a "Kick."

"I'll do that," replied Charley, who skimmed over the letter, stuck it in his pocket, glanced at a couple of letters that lay on his desk and went out.

"Pretty good letters, some of these," commented the Sales Manager. "They speak well of you and your service, too. How do you get them? What do you do with them all? What's the idea, anyway?"

"I just ask for them, that's all," answered the dealer, "and some of them I use in circulating prospects, and all of them that are any good I keep in a testimonial book in the office."

"Why don't you send some of them to our advertising department?"

replied Reilly. "But they have a value which some men might overlook and to me it is one of the most important phases of the question."

"And that is---"

"The kicks I get," supplied the dealer. "Kicks!" exclaimed the Sales Manbe tilled a little bit extra; this testimonial work is what tells me which ones to nurse along.

"When I ask a man for an expression of opinion as to the car he owns and the service I am giving him, he is going to say it's good or had, if he says anything



at all. If he says it's good, very well; but if he says it's bad we find out why and straighten things out. It's that old theory that a man can't harbor a grudge if you can make him tell you what it is and have it out; once we find what kick an owner has we figure to get that grouch out of his system if we have to get into a regular scrap and then make up again. But once we uncover the grouch it is three-quarters removed."

"The theory's right, anyway," admitted the Sales Manager.

"And it works out," declared Reilly. "Take that letter Charley took with him; it's from E. Mason Bedell, a real estate man in a sub-division out in the South End. In answer to my request for an expression, something that we could use testimonially if he had no objection, he

and entered into it with the expectation that he was going to have the time of his life scooting around the country while the boys looked after the business. But he had trouble right away quick. The car ran nicely for a few days and then the old colonel began to have trouble with the steering gear; it got stiff and I guess it was rather hard on his arms.

### Process of Developing a "Booster."

"And what did he do?" said Peilly.
"How should I know?" demanded the
Sales Manager.

"Well, I know, and probably won't forget," asserted Reilly. "Instead of coming down here and asking me what the trouble was the old cuss kept right on driving. I suppose he thought there wasn't anything the matter and that the



"HE TOLD ME WHAT HE THOUGHT OF THE CAR, OF ME, AND EVERYTHING ELSE"

says he doesn't care to go on record as endorsing me or the car, and there is a curt tone in the letter which, read between the lines, is a pretty good indication that he has a kick.

### Little Things That Do Big Damage.

"Now, his having a kick is one thing, but his keeping it to himself is another thing. If he tells everyone else and not me it is injurious to me and my business, so, having got a line on him, Charley goes out to see if he can't get under Bedell's hide and get us solid with him. Generally these kicks don't amount to a hurrah in hell, so far as settling them up is concerned, but they do untold damage if the man with the grouch circulates around town carrying his unfavorable opinion of us."

"I know that that's true."

"Old Col. Proctor—he's bought three cars of me—came near being one of my worst assets. After he bought his first car he set out to learn to drive it, and he did. He enjoyed motoring thoroughly

car steered hard naturally. Every time he tried to twist the wheel he thought less of the car and he told everyone he met that the car was a poor buy. Seeing that he was a sort of retired business man and well known in town, he met a pile of people in one day, and everywhere he went he knocked

"I heard it through a friend of mine, and maybe I didn't beat it out to the colonel's house! I told him I had just dropped in to see how he was getting or. He proceeded to tell me what he thought of the car, of me, of my family, of my salesman, and of everything else connected with me. I asked him about the trouble and he told me. When I screwed up his grease cups a little and took the stiffness out of the steering gear he was so ashamed he couldn't apologize enough. Now he's one of my best boosters, and whenever he has any trouble or wants to know anything he drives down and lets us take care of him.

"You'd be surprised at the little things

that lie back of these grouches; anything from a rattling bolt to a leak in the water system, and the smaller the trouble the bigger the grouch. Whenever we sell a car we tell the owner to drop in now and then and give us a chance to keep him running right, but a great many people buy a car as they do a suit of clothes, and if it isn't satisfactory consider themselves stuck; they never think of coming back to make a kick. That's characteristic of the American people; if you're stuck you're stuck and that's the end of it."

"Did the colonel write you a testimonial letter?" smiled the Sales Manager.

"He did—and it's a dandy." Reilly dug out a big loose leaf book and handed it to the Sales Manager opened at a certain page. "He will do anything for me now, and he is largely responsible for my kick-hunting scheme. His was the worst case I ever had, so far as damaging effects are concerned, and it set me to thinking. Now I have a little form card that I send out asking about the car, and so forth, and along with it I generally send a letter stating that a letter of endorsement will be acceptable.

### But Dealer and Car Must Be Honest.

"Sometimes I send out a bunch and sometimes I send a single one out where I think it is needed. Those owners who keep in touch with us don't require it. for we know how we stand with them. but some of the owners seldom come near us; this fetches them. The main point is that it makes the owner register his kick. When he gets this letter asking for his opinion and suggesting a testimonial he says to himself, 'The sonufagun! The nerve of him! Asking me to say something good about that old car! I'll tell him something!' And generally he does. He gets mad and thinks he's hurting our feelings, while he is only doing the very thing we wanted him to do."

"I'd like to see the dealers for some of these cars settle with a dissatisfied customer." said the Sales Manager.

"Oh, well, that's different." replied Reilly. "If you aren't playing a square game and haven't an honest car and are not doing a business in which you dare face your customers when they come back you don't want to hear kicks. 'Caveat emptor' doesn't go in this husiness—"

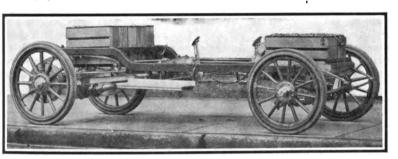
"Who's he?" asked the Sales Manager.
"Don't you know him?" asked Reilly in
surprise. "He runs a used car business
down on Shader street."

### WOODS ELECTRIC MAKERS FIRST WITH 1915 MODEL

Initial Worm-Driven Car Has New Motor Suspension and Springs Mounted on Radius Rods— Four Types of Bodies.

Having produced a new model which it firmly believes is a whole year in advance of anything else of its kind, the Woods Motor Vehicle Co., of Chicago. Ill., is not loath so to style it. Hence, in making public the complete details solidly mounted at the end of a heavy torsion tube which encloses the propeller shaft and attaches to the rear axle casing at the differential housing. There are no universal joints in the drive line, nor are any necessary, for the motor and the rear axle system are so mounted that their relationship remains the same regardless of road conditions or even a minimum of frame weaving.

This very desirable feature has been brought about by the method of supporting the motor, which is quite different from the method hitherto employed. The motor supports consist simply of two ball and socket joints, one



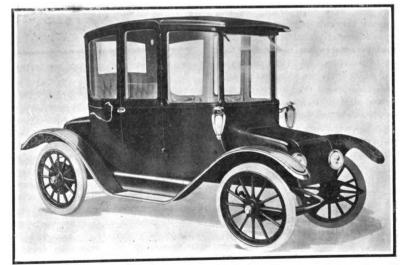
WOODS WORM DRIVE CHASSIS SHOWING MOTOR SUPPORT

of what is styled its 1915 model, the Woods company has easily set at rest the inward questioning of those who, having seen what are virtually next year's models appearing regularly before the summer of a present year has spent itself, have wondered who would be the very first to date its cars a full year ahead. And as might have been expected, the new model, which appeared first at the Chicago show, represents a radical departure from previous Woods practice. It is a new car throughout and its most conspicuous difference from its predecessors is that it links the names Woods and worm drive for the first time

In adopting the worm drive, which, by the way, is of the Hindley type that has been used to such advantage by the makers of the British Lanchester car, among others, Woods engineers have not been content with any half-way measures and have designed their whole rear system in such a way that theory and practice are uncommonly well blended. Thus, the underhung worm has been adopted for two very good reasons. In the first place, the position of the worm beneath the wheel ensures positive and copious lubrication; and in the second place, the slant of the propeller shaft tends to drain the oil away from the motor instead of toward it.

The motor itself is of the high efficiency type, of Woods design, and is on either side of the case, the foundation being a rigid sub-frame. The forward end of the torsion tube is fitted with a tend inward from near the ends of the rear axle and are attached by means of ball and socket joints to the sub-frame that mounts the motor. Another individuality of construction which is quite new and for which great claims are made, is that instead of being attached to the axle the rear springs are attached to the radius rods. Thus, the springs are relieved of the strains of driving and braking and therefore are free to perform only their suspension functions. Both front and rear springs are of the full elliptic type, which construction, together with careful balancing of the load, permits the exclusive use of cushion tires instead of pneumatics. The front wheels are shod with 34 x 4-inch dual tread tires and the rear with 38 x 415-inch dual treads.

The frame upon which the car is built has a "kick-up" at the rear, to allow room for the springs and keep the center of gravity as low as possible, and is a new design in the form of an inverted U. In addition to the sub-frame for the motor support two more sub-frames are used for the battery trays which are placed one forward and one at the rear. The battery consists of 40 cells of 13 plates each, and is so designed and constructed that the necessity for washing is eliminated. The receptacle provided



WOODS WORM-DRIVEN DUAL CONTROL MODEL LISTING AT \$3,250

heavy flange mounted in a large bronze bearing, so that the tube may turn freely in the motor.

The torsion tube, however, is used to transmit very little, if any, of the drive, heavy radius rods—a patented feature of the Woods cars—being used for this purpose. The arrangement of these rods, by the way, is unusual. Instead of paralleling the frame, as is usual, they ex-

to receive the charging plug automatically registers the number of times the battery has been placed on charge.

The controlling mechanism, obviously, is of the greatest importance, and for this reason Woods engineers have elected to employ the simplest possible mechanism for the purpose. Hence, in the cars that are fitted to be driven from but one position, two horizontal levers

and a single brake pedal are all that are needed. On the dual control models, the set of control devices that is not in use is disconnected and remains inoperative, even the brake pedal being temporarily "killed." One of the interesting features of the control is that immediately the controller is placed in the first running position, the brakes automatically are released, should they by any chance be set at the time.

There are two sets of brakes, the emergency set being operated by pedal and ratchet stop and the other set by the controller handle. The emergency brakes act on rear wheel drums measuring 16 x 2 inches; the service brake operates on a propeller shaft drum measuring 2 x 8 inches. Five speeds forward and five reverse are provided by the controller, and under normal conditions the battery permits of trips varying in length from 75 to 100 miles, according to the route, the speed and the condition of the roads.

The front axle is a one-piece I-beam drop-forging made of 3½ per cent. nickel steel properly heat-treated; the rear axle also is of one-piece construction, the distance between axle centers being 110 inches; the tread of course is standard.

With all these mechanical improvements, it goes without saying that bodies, too, have been redesigned and as a result they not only present a more harmonious exterior, but inside the comfort of passengers has received its fair share of attention. All of the new models, of which there are four, have bodies considerably longer than heretofore, and they are slightly wider. Also, corners have been rounded, even to the corners of the windows, doors are wider and the upholstery deeper and more luxurious. In the dual control models, the rear driver's seat is set forward about six inches in order to increase the operator's elbow room.

Of the four new models, one which has rear drive and in which the remaining passengers are seated vis-a-vis, lists at \$3,050; another model with rear drive and revolving seats in front lists at \$3,-150, as does the model with only forward drive; the dual control model, which has revolving chairs for the forward passengers, sells for \$3,250. In addition to the regular equipment-meters, speedometer, toilet cases, etc.-these prices also include such items as slip covers and tire chains. Although the worm drive model is new and therefore is likely to attract most attention, the older models are to be continued, with retinements, of course,

# ELECTRIC PUMP INFLATES TIRE IN NINETY SECONDS

U.S. Portable Outfit for Garage Service Possesses Simplicity and Solidity—One-Piece Truck
Has Castor Wheels.

Evidently having a full knowledge and appreciation of the fact that a portable air-compressing plant for garage use has to do real, downright hard work and thrive on it, the U. S. Electrical Tool Co., of Cincinnati, O., in designing the outfit shown in the accompanying illustration, has not figured on producing a machine to be kept in excelsior and used with care. On the contrary, the construction shows itself to be solid and substantial and perfectly well able to



U. S. ELECTRIC GARAGE OUTFIT

stand up under the conditions imposed by garage service.

The outfit consists of an electric motor, a single-cylinder compressor and an air tank mounted on a low truck with castor wheels and a convenient handle for moving it around; truck and wheels are entirely of metal, the platform being in a single casting. The motor which develops the driving energy is a Westinghouse product, of 1/4 horsepower, and takes its current from the electric lighting system of the garage, an armored cable and a big, strong connector being provided for the purpose. The compressor has a single horizontal cylinder, with deep flanges for air cooling, and is driven through a single gear reduction, there being a small pinion on the motor shaft and a very large gear on the pump

The pump cylinder, the bed and bearing brackets are cast in a single piece; the crankshaft bearings are held in place by caps bolted on and are readily removed for adjustment or replacement,

though judging by their size, they should not need attention until after a long period of service.

Lubrication of the compressor is effected by three oil cups, one on each of the shaft bearings and the third in the cylinder, while oil cellars on the motor keep its bearings lubricated for long periods. Air is pumped from the compressor to the tank, which is 6 inches in diameter and 12 inches high and retains any oil or moisture that may be pumped through.

The air hose, which is long and very heavy, is provided with a gauge for indicating the pressure in the tire, while a larger gauge on top of the air tank, just below the shut-off valve, indicates the tank pressure. That the outfit is powerful enough for really quick work is evidenced by the statement of the makers that it will pump a 35 x 4-inch tire from flat to 70 pounds in 1½ ininutes.

#### Tire that Serves as an Ash Tray.

That which is in a man's eye is more than likely to be in his mind; in other words, what he sees he thinks about. This being the case, it is clear that the Pennsylvania Rubber Co., of Jeannette. Pa., exhibited not a little tactful wisdom in getting out the souvenir match-holder and ash tray that is just being received by "favored folks."

The point of the story is that the convenient little article takes the form of a 34 x 4 Pennsylvania vacuum cup oilproof tire-in miniature, of coursewith the little cups on the tread perfectly reproduced. The "tire" forms the rim of a glass-bottomed tray, just the right size for receiving ashes, and a holder for a box of safety matches rises at one side. The company's name, address and the monogram trade-mark are moulded into the glass. The "tire" is colored "true to nature" and the whole forms a souvenir that is likely to find a permanent place on the desk because of its usefulness, and to act as a constant reminder of vacuum cup tires because of its presence. There is nothing cheap or tawdry about it.

### Ford Man Charges Big for Injury.

That one of Henry Ford's \$5-a-day workmen has the right to demand more damages when incapacitated through an accident than has a workman who is receiving a lesser remuneration, is the contention advanced by John Tily, a Ford employe, who is suing the Detroit United Railways Co. He claims to have been struck by a steet car while he was riding a motorcycle, and has asked for a substantial amount in consequence.



### SELLING CARS IN THE "STANDARDIZED" WAY

# The Salesroom Where All the Salesmen Give the Same Figure for the Car's Weight—Metropolitan Dealer in "Standardized" Cars Shapes Sales Work to a Standard—and Without "Too Much Pep."

"What does the car weigh?" asked the prospect of Salesman No. 1.

"Thirty-eight hundred."

"What does the car weigh?" asked the prospect of Salesman No. 2.

"Thirty-seven hundred."

"What does the car weigh?" asked the prospect of Salesman No. 3.

"Thirty-nine hundred."

Such a situation is very possible, although it is not to be expected that the prospect who walks into a salesroom is going to be handled by three or four different men; but when the would-be buyer of a car garners such information as this from the very men who are supposed to know all about the car, what does he think?

### Different Answers to Same Question.

Also, if the prospect tried the question—or several similar ones—on the salesmen of almost any dealer's staff, what are the answers he would get? Or, if he said to the salesmen of a car which was optionally equipped with wire wheels, "What do you think of wire wheels?" what would the answer be?

In one salesroom they would be the same, and that is the salesroom of the Colt-Stratton Co., distributer of Cole cars in New York City, New England, New Jersey and parts of New York State and Pennsylvania. In regard to wire wheels, the answers might not be the true personal opinion of the salesman, but they would be the same. Anyway, in this matter of policy the salesman is but the mouthpiece of the company for which he works, so why should he inject his own opinion to the confusion of the man who pays the salary?

The Colt-Stratton Co. handles a car which has menopolized the word "stan-.

dardized" and what the maker aims to do in his car this dealership organization does in its marketing; it has "standardized" its salesmanship and its selling force. If a prospect asks a Colt-Stratton salesman what a car weighs the salesman will tell him, and if the prospect asks every other man in the place the answer will be the same. And if he wants to know the salesman's attitude on wire wheels the prospect will get the same reply, from the manager down to the foot of the list.

Standardizing salesmanship was long ago recognized as an important phase of a dealer's business by F. L. Wurzburg, who is manager of the Colt-Stratton business; there were so many of these selling points on which the salesmen were somewhere near together but were far from accurate. Imagine a prospect being told by one salesman that a car weighed 3,900 pounds, would give 12 miles to the gallon of gasolene and that wire wheels were the best by far, while another salesman told him the car weighed 3.700 pounds, gave 15 miles to the gallon of "gas" and that the type of wheel didn't make much difference! What would such a prospect believe of the entire sales story? Very likely he would say, "If two stories are so far apart as that, what can I believe?"

#### "Standardized" but Not "Systematized."

Recognizing the situation, the company some time ago set out to guard against such inconsistencies; it aimed also to help each member of the organization work to his greatest efficiency. It "standardized" but it did not "systematize," at least not to the point where system becomes red tape. When a matter of policy is concerned, such as

the corporate opinion on wire wheels, the salesmen are called together some evening after closing time and Wurzburg explains the course to be pursued on future occasions. The weight of a car is given to the salesmen and they are directed to remember to give the exact figure, not guess at it.

But "standardization" as the Cole uses it does not seem to be limited to the bare definition given in the dictionary; apparently it means that the car is made of the best part in each particular field, that part which is accepted as standard; and in this respect, too, the word is made to apply to salesmanship. What appeals to the Colt-Stratton people as the best in selling methods is grasped and incorporated.

### "Too Much Pep" Loses its Force.

As has been stated, the salesmen are called into meeting when it is deemed necessary to impart to them any point or piece of information, but as to regular meetings as a steady diet, Wurzburg said he does not believe in them. "Too much 'pep,'" was the way he said it, "doesn't amount to much. It's just like saving 'Giddap! Giddap!' to a horse; if you say it all the time he gets so he doesn't pay any attention to it. If we have need for a meeting we hold it, but if there isn't any particular call for it we don't hold it. There is such a thing as too much of what you call 'pep.' Keeping after salesmen all the time doesn't make the impression it should.

"We aim to aid the salesman individually, rather than as a group; we endeavor to cooperate with each man as a separate unit in the organization and to keep in close touch with him. We try to make each sale and prospect a personal matter with each salesman rather than to rely upon a system which recognizes the sales force as a group only."

Back of this remark lies the whole Colt-Stratton sales policy. Each salesman is truly just as much an individual as if he were the only salesman in the organization. When he gets a prospect the prospect is his until he "lands" him or gives him up. When the salesman walks out on the floor to meet a prospect the seller carries in his pocket a little 3 x 5-inch pad on which are blank spaces for the name and address of the prospect, the date, 'phone number, car he is interested in, proposition made to him, remarks and the best time to see him again. Sometimes these can be filled out in front of the prospect, but more

thought was fresh and "hot" and when he was matching his wits against those of the prospect, have a strange and not easily explained value. When the salesman looks at that original memorandum it brings back the whole situation; he again sees the prospect and very often remembers some angle or incident which a typewritten record would not convey, and he is given added energy in the further prosecution of the case.

### Salesman Cannot Fail to Report.

Having served this purpose, the slip is thrown away, but the fact that the filing girls have noted that the slip went down to the salesman on that day makes it impossible for him to forget to report back on the prospect; then when he does report the regular filing card is on the "live" list and receives frequent mailings from the company, but which the salesman considers further work at the present time futile he so reports and the name goes into the "remote" file. Names in the "remote" file may stay there weeks, months or years, but this list has not yet grown so big that undue storage space is necessary. Various "reviving" plans are employed.

In presenting to prospective buyers the good points of the Cole car, "standardizing" enters into the work in that the full value of each selling point is utilized. Take the case of the power driven tire pump on the Cole, for instance: To the average salesman a pump is a pump, and its advantage is that it frees the driver from the labor of hand inflation. Doubtless many other cars use the same pump that is on the Cole, but in the Colt-Stratton salesrooms it is a different pump. Maybe every salesman knows that this tire pump may be used as a sort of pneumatic cleaner, that it will blow the dust out of the upholstery and out of a man's clothes after a long, dusty ride, but how many ever thought to make that a selling point? It is but one of the "last drops of juice" that the Colt-Stratton Co. squeezes out of the selling points of the Cole car.

### No Two Salesmen Use Same Methods.

Wurzburg, in discussing the Colt-Stratton sales force, voluntarily answered a question which doubtless has occurred to many men. That is, "Does each salesman use all the arguments about a car on each prospect? If not, which ones does he use, and why? And do two salesmen use the same argument?"

"One salesman uses one set of selling points while another salesman may make his appeal differently." said Wurzburg. "No two work exactly the same, and that is why we believe it best to keep in personal touch with the men. One salesman may have made sales through the use of certain arguments, and these, therefore, appeal to him as the best and most effective points about the car. Another, by the same course of reasoning, may lay emphasis on other points."

But this does not mean that the salesmanship is not standardized, for with Cole it means using the one thing which is best in its field, and in a salesman the one best thing is individuality in work, wherefore, paradoxical though it may seem, they are all alike in that they are all different. But each salesman is helped to give the best that is in himand that is "standardization."

COLT-STR	ATTON CO. —	REPORT	
NameAddress		Date	191
Interested in Proposition made to him	Cyl. Model		
Remarks			
See again about			Salesman.

POCKET MEMORANDUM BLANK USED BY COLT-STRATTON FLOOR SALESMEN

often the salesman makes his notes after the man has gone.

### Original Memorandums Are Preserved.

Under a "systemy" system the salesman very likely would make out a report, have the name and date entered on the prospect filing card, and throw the slip away, but under the "personal element" plan worked out by Wurzburg the slips are utilized to their full value. The salesman turns the slip in to the manager and it is placed in a file kept by a couple of girls; it is placed under the date which the salesman noted as the best time to see or communicate with the prospect again.

When that day comes the girls make a record of the fact and then send the slip down to the salesman: were the information on the slip typewritten it would say no more, no less, than the written words convey, but—the words on the slip, in the handwriting of the salesman, written at a time when the

opened and further information recorded thereon,

Occasionally he is asked to talk with the manager about his work, and more often he takes things up with the manager without being asked. The close relations of the company with the sales force make this a very natural course of procedure on the part of the salesman.

One of the greatest opportunities for "standardization"—the employment of the most effective method—is in the prospect mailing list; some dealers, and manufacturfers, too, spend many needless and unprofitable dollars in the course of a year in mailing letters and literature to prospects who are too "dead" to make a funeral worth while. To avoid this the salesman who first begins work on a prospect is made the judge of how long this prospect is "alive."

As long as the salesman thinks there is any chance of results accruing from continued effort, the prospect is retained

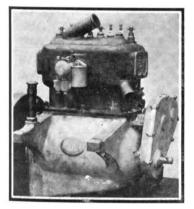
### MOTOR WORLD

# ZFNITH DISPENSES WITH OUTSIDE INTAKE MANIFOLD

Latest Carburetter Bolts Direct to Cylinder Casting—Old Principles Retained and Details Are Improved.

Just what connection there exists between the practice of casting cylinders in a single block and carburetter design may not be apparent at first blush; but that there is a real relationship is sufficiently indicated by the fact that so wise a manufacturer as the Zenith Carburetor Co., of Detroit, has placed on the market a carburetter that is designed especially for block-cast motors.

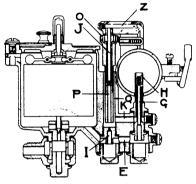
Exteriorly, its prominent feature is that it has a flange that bolts directly



ZENITH BUCHET INSTALLATION

to the motor casting where the manifold passages are cast integral with the cylinders, the elimination of even the short pipe that often is used to carry gas from carburetter to motor adding not a little to the cleanness and accessibility of the engine. Incidentally, the high position of the carburetter is made possible, in many cases, only by the practice of putting the gasolene tank high up in the cowl, so that there will be ample head of fuel, or by the pressure feed from a tank located at the rear. With the tank located under the front seat there would be insufficient head in most cases for satisfactory operation. In one of the accompanying illustrations the carburetter is shown attached to a Buchet motor, and the extreme compactness and neatness of the arrangement is obvious.

While the carburetter is constructed on principles that long have been employed by the Zenith company, combining with a nozzle of the usual type a concentric nozzle having a flow of gasolene that is independent of the suction of the engine, a slow-speed device has been incorporated that differs somewhat from the former construction. The ordinary nozzle, shown at G, takes gasolene in the usual way from the float chamber, the fuel flowing through a little sediment cup on the way. Surrounding the nozzle is the "cap jet" H, gasolene for which is fed through the passage K opening into a well Q which is open to the atmosphere at the top and is fed from the float chamber by a small hole



NEWEST ZENITH CARBURETTER

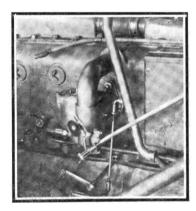
or "compensator" through which the fuel can pass only at a predetermined rate and is not affected by the suction of the engine.

Up to this point the construction is practically that of the previous Zenith models. The new slow speed device consists of what is really a small separate carburetter. An "idling tube" J with an "idling nozzle" P rises from the well Q. The tube can be adjusted by screwing it up or down and opening or closing the air passage around the tip of the nozzle P, the air coming in through holes in the outer tube above the nozzle; adjustment is made by means of the knurled head O. The strong suction of the motor when the throttle is almost closed produces an extremely rich mixture at the nozzle P. which rises through the tube J, passes into the duct Z and opens into the carburetter near the throttle, where the rich gas mixes with the air that passes the throttle. This provides a rich mixture for starting and for slow turning over. When the throttle is opened, however, the compound nozzle becomes effective and the slow-speed nozzle is automatically made inactive. The adjustment of the slow-speed device has no effect on the carburetter at medium and high speeds.

According to the manufacturers, this type of carburetter finds its application chiefly in motors of the monobloc type in which the cored-in intake passages pass through the center of the casting

from one side to the other. The carburetter thus is placed in a position otherwise unoccupied and removes an obstruction from in front of the valve covers and helps not a little to render their removal and the inspection of the valve stems and springs an easy matter. At least one bend in the intake passage is eliminated, which, of course, makes for free ingress of gas and possibly adds a little to the efficiency of the motor.

Another model of the Zenith carburetter is made for use where there is a hot-air passage cored through the casting, as in the Hudson motor shown in one of the accompanying illustrations. The carburetter is bolted up to the engine casting as in the other motor, but a pipe from the cored passage leads hot air to it from above, as shown. A little flap valve, operated by a dash control, admits cold air; in the illustration the



ZENITH HUDSON INSTALLATION

flap is shown fully open. When the flap is partly closed all the air going to the carburetter is preheated air, and when it is fully closed the carburetter is choked and an excessively rich mixture is formed, which is useful for starting in cold weather.

Other features of the Zenith carburetter, which have been used from the first, such as positive overhead floatvalve action, removable venturi tube, absence of exterior main adjustments and so on, are retained practically unchanged for the very excellent reason that they have proved their worth in service.

#### Parish & Bingham Enlarging Again.

On an 8½-acre plot recently purchased at Madison avenue and Berea road, in Cleveland, the Parish & Bingham Co. is making ready to erect an addition to its present large plant. The structure, which will be of brick and steel construction, will be 100 x 900 feet; prism glass also will enter very largely into its make-up.



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### PRINCIPLE AND PRACTICE OF COLD WEATHER PRIMING

Why Motor-Spun Engines Should Fire Promptly - Spraying vs. Squirting for Priming in Winter Weather.

The fact that many cars are equipped with power starters has led many drivers into the erroneous idea that it is not necessary to give as much attention to the question of obtaining the first explosion at the earliest possible revolution, as it was when the cranking was done by a motor with two legs to stand on and two arms to swing the crank. The fact of the matter is that prompt firing is just as important with a starter as without it, for though the driver does not feel the effect of protracted "grinding" in his muscles, the starting mechanism feels it and there is a needless draw on the battery, needless wear and tear on the mechanical parts and needless pumping in and out of perfectly good gasolene.

In cold weather, when there is likely to be more or less reduction in the efficiency of the starting battery and at the same time a decided reluctance on the part of the motor to fire the first charge after the cranking process has been started, everything that can assist in prompt firing should be given just as close attention as if there was no starting system There are plenty of good dashboard priming devices on the market, and they are so reasonable in price and so easily installed that there is no excuse for pottering around the cylinders with a squirt-can full of gasolene. A primer adds practically nothing to the complication of the car, and it certainly does help not a little when the weather is such as to make the motor sluggish in getting to work.

With reference to this priming business, there is a point that sometimes is not quite grasped Everyone who has fiddled with the adjustment of a carburetter knows that when the gasolene feed is opened so as to give an excessive flow of the liquid the charges will not fire. Yet in very cold weather it seems almost impossible, sometimes, to squirt too much gasolene into the cylinders. Often the only trouble is to get enough in to induce the motor to fire. The answer is not far to seek. When the fuel is properly vaporized by the carburetter all the gasolene is mixed with air and it all goes to make the charge rich. When gasolene is injected through the "dope-cocks."

however, most of it merely falls on the piston head, where it lies in puddles, and the refrigerator-like condition of the chamber permits only a very little of it to vaporize. Further, what does vaporize lies close to the cylinder head, as gasolene vapor is considerably heavier than air and doesn't rise unless it has to. So, if there is not a good deal of it there will be a thick, woolly gas, too rich to fire, right on top of the piston, a good combustible mixture a little higher

up, and above that--if the spark plug has not yet been attained-a thin, weak mixture that is of no value from a firing point of view

From the toregoing it is reasonably clear that the best way to prime a motor is to inject the gasolene in as finely divided a state as possible, so that it will be diffused and mixed with the air and will not at once settle on the piston head. Incidentally, ordinary gasolene will not vaporize spontaneously at a temperature lower than about 5 degrees F., though an explosive mixture can be made by spraying. It will be more or less a mere mechanical mixture; it will probably make a good deal of smoke and smell; but it will warm things up for the next charge and so serve its purpose. Proof of the fact that only a small part of the gasolene with which a cold cylinder is doped is vaporized is found in the fact that the first firing of a frigid motor will produce a lot of smoke from the burning of the raw liquid and the over-rich strata of vapor below the layer of combustible gas.

The value of ether or of very high test gasolene for priming lies in the fact that it vaporizes rapidly and under conditions that will leave ordinary gasolene a stubborn liquid-such, for instance, as intense cold.

Often when a motor is extremely cold ordinary priming through the cocks is merely a waste of time, the temperature being too low to permit the formation of any gas or vapor. In such a case the spraying is particularly valuable, especially if the spray-priming is carried on while the motor is turning over briskly. It is possible to make a mechanical mixture that can be "lit" even when very cold, so long as ia is kept agitated and the gasolene is not given a chance to settle out of the air. A little warming in any of the well-known ways also helps to keep the gasolene where the spark can reach it. One of the reasons why a motor often will start after a more or less protracted period of cranking after having been well doped is that the gasolene is mechanically agitated in the process and a whiff of something that is combustible gets within reach of the spark plug. and the motor starts. The fact of the matter is that the motor will start if it gets a chance-and otherwise it won't.

### Small Tools that Break Easily.

Drilling and tapping small holes in metal that is fibrous rather than granular-copper, for instance, or steel-it will be noticed that particles of the metal cling to the tool and tend to clog its progress seriously. In fact, there is danger of snapping it off, especially in the case of the tap, if the cuttings are not cleared away occasionally. The deeper the hole to be drilled or tapped the greater the danger, of course, and as it is difficult enough to prevent the breakage of small taps and drills at the best, it is well to have an eye to the matter when working in the "sticky" metals.

### Diverting Drill Point Direction.

After the drilling of a hole has been started, it is possible to change the location slightly provided the edge of the drill has not reached the surface of the piece being drilled. A deep center-punch mark in the depression that has been cut, a little further in the right direction than the drill should move, will "draw" the point. A very slight cut after this will show whether the drill is following properly, and if it is not another centerpunch mark can be put in. Once the edge of the drill-that is, the outer circumference—gets below the surface. however, "drawing" is impossible.

### Thickness in Thousandths of Inch.

While to the uninitiated it may sound almost marvellous to refer to measurements of thousandths of an inch, it really is an extremely easy matter to arrive at such dimensions with modern instruments. With a micrometer caliper it is as easy to measure the thickness of a piece of paper as it is to measure a pencil with a foot rule. Measurement of the paper on which Motor World is printed reveals the fact that it is just four thousandths of an inch thick, while the cover is six thousandths thick.

### Suggestions for Tank Soldering.

While it is not difficult to solder a small leak in a tank, for instance, it is impossible to mend a hole of any considerable size by soldering only because the soft metal will not bridge much of a gap. Therefore, the edges of the leak should be brought as close together a possible, or, if they cannot be closed.3 small patch should be soldered on or else the hole should be backed by something

# SMALL TOURING MACHINE CAN BE CLOSED CAR, TOO

Town Car Body Offered and Limousine, Too, by Different Makers

—Both Detachable, Light
and Easily Applied.

Small cars have increased and multiplied with such rapidity that it is by no means surprising that, among the multitudes of users, there should be many weather. Where the front of the body joins the dashboard there is a rounded steel cowl that makes an extremely neat finish. In fact, the appearance of the "limosette" leaves little to be desired, and the makers state that it is absolutely weatherproof and also extremely durable.

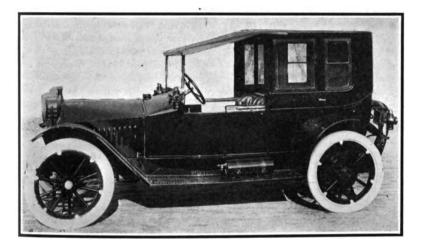
The body can be attached to a Ford car without other preparation than the removal of the standard top and windshield. No tools are required except an ordinary monkey-wrench and the only assistance needed is for the lifting on

president of the Chas. E. Reiss & Co., Inc., of 1690 Broadway, New York, Hupmobile distributers. It is built for Hupmobiles and differs from the Mandel body chiefly in the fact that it is designed along town car lines, only the rear part of the machine being housed in.

Overhead protection for the chauffeur is provided by an extensible canopy which fastens to the top of the windshield. The door of the attachable body fits the permanent door and opens with it. The design is worked out with such skill that there is little or nothing in the appearance of a car, with the attachment in place, to show that it is not a permanent, built-in body. The construction is metal and the lining of whipcord. It takes about 20 minutes to change a Hupmobile from an open car to a closed town car, and the addition of the housing does not in any way necessitate the marring of the permanent body.



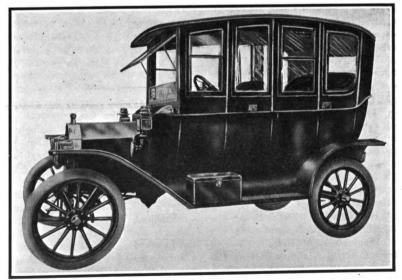
While it has been the fashion, even in many parts of America, to imagine that most of the truly good automobile engines come from abroad, the Continental Motor Mfg. Co., of Detroit, is upsetting these notions by making an active hid for European trade. Its enormous facilities afford advantages in the way of



REISS'S HUPMOBILE DETACHABLE TOWN CAR BODY

who want to use their machines in all kinds of weather and in all seasons. It is for these year-round users that several styles of detachable or convertible bodies have been designed, one of which was illustrated and described in Motor World for January 15. The accompanying illustrations show two more, which, as may easily be seen, differ considerably from each other and from the one already referred to.

The Mandel "limosette," which is built by the Mandel Limousine Co., of 1457 W. Congress street, Chicago, is designed especially for Ford cars and is a separate unit that is put on the regular Ford touring body and will fit all cars of the 1912, 1913 and 1914 models. It is of composite construction, of steel and wood, with brass trimmings, mahogany ceiling and window framing, and broadcloth upholstery. The windows can be opened and the doors connect with the permanent doors so that both open together. Of the forward doors only one, that on the driver's right, is made to open. A windshield is incorporated with the structure, and over it the hood projects in an overhang that not only adds much to the appearance, but also serves as an additional protection in inclement



MANDEL "LIMOSETTE" DESIGNED FOR FORD CARS

and the balancing of the body—which, incidentally, weighs but 150 pounds. The price is \$150. A smaller tiype is made to fit Ford roadsters and costs \$100. The general construction is the same in both cases.

Of quite a different type is the body designed by Charles E. Reiss, who is

both protection and price that even foreign manufacturers cannot overlook and the big company is making the most of its position by instituting an active campaign through a branch office which will be established in Paris. It will be in charge of R. A. Rothermel, who is already on the ground.



# CINCINNATI'S FIRST SHOW HOLDS CARS AND TRUCKS

"Independent's" Exhibition, Staged in Office Skyscraper, Draws Big Crowds—The Exhibitors and What They Display.

Two separate shows this year, instead of the one it had last year, is the program laid down for Cincinnati, O., and all during this week the independents. otherwise known as the Automobile Trade Association, hold the center of the stage, which is set in a downtown office skyscraper. The first of the shows was opened on Saturday night, 7th inst., in the Union Central Life Insurance Building, where the whole of the main floor and the basement are occupied, and will come to a close on Saturday night, 14th inst. The Automobile Dealers' Association's show is to be opened in the Music Hall on Feb. 21st and will hold the boards until March 4th.

In the mean time, the "independents" are drawing healthy crowds at every session for both pleasure vehicles and commercials are shown together and there is a liberal sprinkling of accessories. Elaborate is not the word best suited to describe the decorations. There are trellises and much greenery and plenty of bright lights, though little attempt has been made to cover the side walls and the ceiling. Among the exhibitors are the following:

Peerless Motor Car Co., Peerless pleasure and commercial; Winton Motor Car Co., Winton; Lexington-Howard Co., Lexington and Howard; Southern Motor Car Co., Overland pleasure and commercial; Ballman & Vonderahe, Chicago electric; Western Motor Car Co., Lozier; Paige-Detroit Motor Car Co., Paige-Detroit; White Automobile Co., White; Mercer Automobile Co., Mercer; Dr. H. C. Wendell, Vulcan; Velie Motor Vehicle Co., Velie pleasure and commercial; Schacht Motor Car Co., Schacht; A. L. Pachoud Motor Car Co., King and Abbott-Detroit; Crescent Motor Co., Ohio; International Harvester Co., International commercials; Herald Motor Car Co., Reo and Chevrolet; Stewart Iron Works, Stewart trucks. -

### St. Joseph Sees its First Show.

The St. Joseph (Mo.) Automobile Show Association closed the doors on its first annual show on Saturday last. 7th inst., and all during the week it was in progress the Auditorium, which housed it, was well crowded. By way of

disguising the building, it was fitted out with a succession of pergolas extending around the four walls and down the center, green things trailing over the whitened woodwork and the whole set off with myriads of electric lights. Among the cars exhibited were the following: Cadillac, Cole, Lozier, Packard, Buick, Selden, Maxwell, Paige-Detroit, King, Chandler, Krit, Kissel, Grant, Detroit and Standard electrics, Chalmers, Stevens-Duryea and Overland.

#### American Trucks in Montreal Show.

Having disposed of its pleasure car show, which was closed on Saturday night, 31st ult., the Montreal (P. Q.) Dealers' Association very promptly turned its attention to the staging of the second part of its program, which scheduled the appearance of a goodly number of commercial vehicles to take the place of the lighter and swifter passenger cars. All of them were moved into place in the Drill Hall on Monday, and on Tuesday, 3rd inst., the building again was crowded with visitors, though of a more utilitarian turn of mind. The commercial vehicles held the center of the stage until Saturday night, 7th inst.

The international flavor that was moved out of the Drill Hall with the pleasure cars was moved right back in again with the trucks. For though a fair proportion of those on view bore names not altogether familiar to American eyes, a goodly number carried thoroughly American nameplates. Packard trucks, for instance, occupied a prominent space, as did the Garfords and the Jefferys, with such other well-known American names as White. Kelly, Mack, Chase and Gramm scarcely less conspicuous. Among the foreign trucks displayed were the following: Commer, Foden steam, Tate electric, Berliet, Mc-Laughlin, Halley, Thornycroft, Brantford, Stuart and Jennings.

### Colorado Seeks Lower Car Freights.

In the belief that many more tourists would ship their automobiles to Colorado and tour the State if freight rates from the East and Southwest were lower, the Colorado Springs Chamber of Commerce has asked various railroads to give the matter consideration; last summer 2.000 motoring parties visited Pike's Peak alone and it is believed that touring would be greatly increased if shipping the cars were made an inducement. The attitude of the Chamber is that the railroads would not lose because the passenger tickets bought by the tourists who shipped their cars would compensate for the difference.

### KALAMAZOO STAGES ITS SHOW IN HANGING GARDEN

Mayor Turns the Switch that Lights up Brand New State Armory— More than a Score of Brands of Cars Revealed.

Kalamazoo is in the throes of its annual automobile show. It was opened on Monday night, 3rd inst., in the brand new State Armory by no less a person than Mayor A. B. Constable, and until the following Saturday night the lights blazed and the band played and throngs of visitors promenaded up and down the broad aisles. All told, there were nearly a commercial vehicles disposed about the main floor, under great hanging baskets of cut flowers and among potted trees and plants.

The complete list of exhibitors is as follows:

Kalamazoo Auto Sales Co., Hudson. Overland and Willys utility; George Boyles, Studebaker; Winton Motor Car Co., Winton; Oakland Motor Car Co.. Oakland; G. A. Coates, Haynes; Millman & Nash, Reo; Motor Vehicle Sales Co., Buick; W. O. Harlow, Ford and Moon; Blood Bros., Blood cyclecars; Cadillae Motor Car Co., Cadillae; Imperial Motor Car Co., Imperial; E. B. Desenberg, boats; Clark & Avery, Chalmers, Paige-Detroit and Hupmobile; Kalamazoo Motor Truck Co., Kalamazoo trucks; Cummings Bros., supplies; Peerless Rubber Co., tires; Dallas Boudemann, Jr., stationary engines; Visso Co., lubricants; M. E. Dunkley, supplies; Kalamazoo Spring & Axle Co.,

### Too Poor to Buy License; Is Freed.

Whether the offer of E. W. Barr, a Detroit expressman, to sell his truck for \$300 was bona fide is immaterial; the offer achieved its object and Barr was permifted to drive his truck home from a police station. He had been arrested for having but one tag on his truck, and he told the police he could not afford to pay the \$30 which his motor makes necessary under Michigan's new horsepower license law.

When the police insisted that no exception could be made to the law Barr offered to sell the truck on the spot for \$300 to anyone who would drive it away; he paid \$1,200 for it. He said he has four children and just manages to make a living. The police allowed him to drive away with his licenseless vehicle.

### VARIETY IN VISES THAT FACILITATE REPAIRS

# Wide Latitude For Choice Offered by Many Makers and the Necessity for Choosing Wisely—Screw Vises and Some Without Screws Contrasted—Some Types That Hold Pipes as Well as Tapers.

"Mr. Rea," said Mr. Rea's shop foreman, after he had fidgeted for three whole minutes, waiting for the boss to look up from his inspection of a job card, "Mr. Rea, the vise is bust, and——"

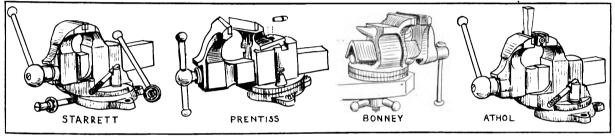
"Broken, you mean, don't you, John?" interrupted Rea.

"No, I don't mean 'broken'!" with the accent on the 'broken,' and the whole sentence in a rather peevish tone. "When the screw strips on a vise and one of the

to a six-inch pipe, and hold it without as much as scratching it. Should have done it long ago, I suppose, but there are so many to choose from and I wanted to be sure of getting a suitable one. In about a week your troubles will be over, and in the meantime you can do the best you can with that planer vise. See if you can't make it do."

True to schedule, the expressman dumped a heavy packing case in front

are combination vises; and quick-acting ones; and vises that have no screws; and some that have them; and others that open their jaws up and down like an alligator. But long before he definitely decided upon any particular type, he had figured out the probable needs of his shop a few years hence. Consequently, the shop foreman's whistle of surprise at the size of the tool brought a complacent smile to his face.



FOUR DIFFERENT TYPES OF VISES THAT WILL MAKE A PLACE FOR THEMSELVES IN ANY. SHOP

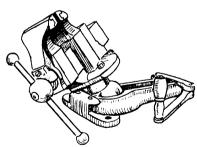
jaws snaps off and lets a crankshaft down on your pet bunion joint, the vise is just plain bust; it ain't 'broken' at all, just plain 'bust,'" with a final shake of his head.

"The poor old vise!" was the boss's only comment. Then he added as an after thought: "I knew it was about due; know how old that vise is, or was? No? Jake Strander's kids used to play with that vise during the enthusiastic period of their boyish lives when every kid with red blood manufactured pushmobiles and young steam engines. I believe one of the steam engines is still in existence; but the vise-it's gone, and it's about time. It was 20 years old, if it was a minute. Jake passed it along to me when I took over the garage, and for the last four years I have been wondering when it would 'bust.' Three years ago it was good enough. But it hasn't grown up with the business. And say, you wouldn't ask a baby to swing a sledge, would you? The vise was three sizes too small to hold the crankshaft.

"Now, I'll tell you what I'll do," he hurried on as the foreman gave evidences of slipping in a word. "I'll buy a vise that is a vise—a vise that will hold anything in the shop, from a pin

of Rea's suburban garage just seven days later; Rea's shop foreman unpacked the vise and set it up and he has been living happily ever since, as they say in the story books.

All of which probably seems very simple to the person whose acquaintance is



PARKER DIE SINKER'S VISE

limited to one, or perhaps two, vises. But Rea had troubles of his own in picking out the particular vise he wanted; for nearly three hours he delved through catalogs, and the variety that he discovered gave him a new impression of the activities of those who produce vises. He found that there is a vise for every individual need, ranging in size from a "pee-wee" to a giant; and that there

It really does not matter what kind of a vise it was that Rea purchased; the principle of the operation is what counted. Before he invested, he carefully examined the field; he scrutinized more than a score of catalogs; then he bought the vise that he judged would yield him the greatest dividends-in service-for the capital invested. And anyone else can follow right along in Rea's footsteps: for his trail is marked by the pictures and the descriptions that form the basis of this article. They are the ones that impressed Rea the most, for they are all different. Of course, he found that nearly every maker produced any number of styles; but in the end he narrowed his choice down to the ones that are illustrated herewith.

Among the good, old-fashioned plain vises, he found the Bonney, which is produced by the Bonney Vise and Tool Works, of Allentown, Pa. The picture almost makes the vise plain. To set it up merely requires that a hole be drilled in the bench, the swivel plate put in place and the vise dropped in on top of the plate; the big wing screw at the bottom holds the vise firmly, though it can be easily turned to accommodate it to the work in hand. The long screw

### MOTOR WORLD

be used for holding tapers. In another style, a plain clamp takes the place of the swivel plate; this style is made in sizes ranging from a little fellow having 1½-inch jaws to one just twice the size. The swivel type comes with jaws ranging from two to three inches.

#### Jaws that Hold Tapered Pieces.

The Prentiss Vise Co., of Watertown, N. Y., produces practically nothing but vises, as its title indicates, and the line is a big one and a varied. The style that is illustrated herewith is particularly suitable for the average garage or repair-shop and it ought not to stay very long in the stock of any dealer. It is styled a filer's or finisher's vise and quite as a matter of course it has a swivel base; the little hand wheel at the side clamps the vise or releases it so that it can be turned to any angle. One of the distinctive features of the vise are its self-adjusting jaws. The jaw that ordinarily is stationary is arranged so that it will turn-after a tiny pin is withdrawn -and then when the movable jaw is clamped up on a taper the other jaw automatically accommodates itself to the angle. With the pin in place, the inner jaw remains stationary. The screw thread is protected, as the picture shows, and the jaws measure 41/4 inches; the opening is 51/4 inches, and the weight of the vise 47 pounds.

#### Quick-Acting and Swiveling Vises.

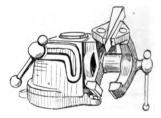
The Athol Machine Co., of Athol, Mass., is another company that produces vises in considerable variety. The one that is illustrated herewith is different from anything else of its kind and has a number of interesting features. The handle, for instance, does not slide through the screw-head. There are teeth on the end of the screw and also on the handle and a spring holds the teeth together. After the jaws have been tightened on the work, the handle can be moved to any position where it is least in the way. Moreover, the jaws can be tightened to exactly the proper tension, for the handle can be put in any position to obtain just the proper leverage.

The locking arrangement in the swivel base is another distinctive feature; it is shown in the sketch. The lock consists of a corrugated headed bolt which engages corrugations in the base; a light spring holds the corrugations together. When the bolt is pressed downward, after it has been unscrewed, the corrugations are released and the vise can be swiveled to any position. When the bolt is released the corrugations come together and are locked together

when the nut is tightened. Hence, it is impossible for the vise to slip; the vise then becomes to all intents and purposes a solid base vise. There are a number of sizes with jaws varying from 2½ inches to 5 inches, the weight of the lightest being 7½ pounds and of the heaviest 85 pounds.

The Athol company, by the way, produces a useful little contrivance for holding tapers that can be fitted to any vise in about two shakes. Incidentally, this taper holder, which is shown by the accompanying picture, holds tapers in a vertical position and every one who has ever attempted the operation knows just how hard it is to hold a taper upright with an ordinary vise. The taper holder is made in several sizes to fit jaws from 15% inches to four inches in width.

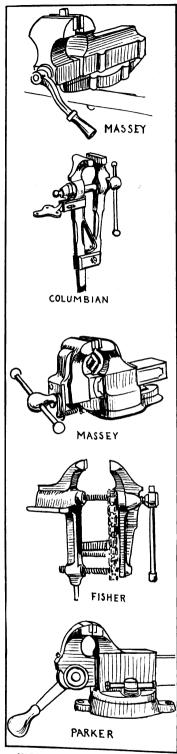
With all of these vises, more or less time is required to close the jaws on the work; the screw must be turned until they grip. But the Massey Vise Co., of



EMMERT COMBINATION VISE

Chicago, Ill., among a number of others, has eliminated all this "lost motion" by providing for quick adjustment. In the Massey vise, there is a little trigger which the illustration shows to be quite close to the screw handle. When the trigger is pressed, the screw threads are disengaged and the jaws can be pulled open and then pushed shut on the work; a part turn of the handle tightens the jaws. Incidentally, this particular vise is a combination affair which will hold pipes quite as well as anything else. Two sizes are made, one with jaws measuring 31/2 inches in width and accommodating two-inch pipes, and the other with 41/2inch jaws and holding three-inch pipes.

The Massey company is not the only one that produces quick acting vises, of course, nor is this the only style the Massey company produces. In another, for instance, the handle is fairly heavy and when raised to an upright position releases the threads so that the jaws can be instantly adjusted; downward pressure on the handle tightens the jaws. This style is made in four sizes ranging from one having 3½-inch jaws and weighing 35 pounds to one having 7-inch jaws and weighing 135 pounds.



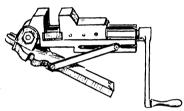
VARIETY IN MECHANIC'S VISES

that moves the outer jaw is thoroughly protected and there is an attachment that goes with the tool so that it can

### MOTOR WORLD

The Stephens patent vise, which is distributed by L. H. Wightmann & Co., of Boston, Mass., also is quick acting, though the arrangement is quite different. The handle, in this case, as at the side and it operates what is virtually a rack and pinion. When the handle is pushed up close to the rack, the pinion disengages itself and the jaws can be quickly adjusted. Pulling the handle out engages the rack, tightens the jaws, and at the same time jams them through the eccentric movement of a cam.

There are few kinds of vises that do not find place in the variety produced by the Chas. Parker Co., of Meriden, Conn., and the single one that is illustrated herewith, though of the quick-acting type, is different from any of the others. To operate the vise, the handle is raised to a horizontal position, when the jaws can be readily adjusted. Downward pressure on the handle—the most natural movement, by the way—tightens the jaws and at the same time locks



DAVENPORT BENCH VISE

them. As the picture makes plain, the vise is mounted on a swivel base, a substantial lock at the side being provided; there are several sizes, jaws varying in width from two to four inches.

In another Parker vise, which though produced expressly for die sinkers, nevertheless would prove more than ordinarily useful in any shop, the vise is not only swivelling but can be adjusted to almost any angle in no time at all. The vise part proper is mounted in the base by means of a large ball and socket; moving the upright handle shown by the illustration releases the ball and permits the vise to be adjusted. The facility with which the position of the vise can be altered makes the tool particularly useful for filing and chipping operations.

Carrying the idea expressed by the Parker vise even further, the Emmert Mfg. Co., of Waynesboro. Pa., has produced a tool which has no fewer than five sets of jaws and which is capable of adjustment to almost any conceivable position. As the vise is shown in the illustration, there is a pair of removable jaws placed on uprights that will carry several other types of jaws for holding different kinds of work; in the position

shown, the vise is adjusted to hold tapers. By loosening a set screw, the jaws can be swung around so that they open vertically; or they can be so set that two pairs of jaws can be made to grip the same work. In fact, there is practically no limit to the number of irregular shapes that can be gripped by the jaws either separately or in combination. The vise is made in several sizes, the smallest having 2-inch jaws with an opening of four inches, and the largest having six-inch jaws with an opening of nine inches; the latter weighs 230 pounds and the former 15 pounds.

### "Leg" Vise that Always is Useful.

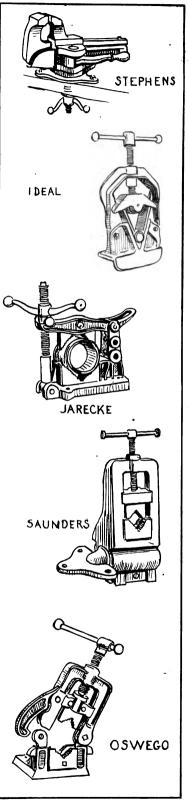
Among the smaller types of vises, the so-called blacksmith's vise always has been more or less popular for the reason that it is comparatively inexpensive, is exceedingly simple and is easily set up. The Columbian Hardware Co., of Cleveland, O., produces a type vise of this kind which is illustrated herewith. As the picture makes plain, the jaws are spread by means of a spring and drawn together through a screw which is completely enclosed and protected. The jaws of this particular type measure six inches in length and the opening is six inches; several weights, from 60 to 75 pounds, are produced.

The Phoenix vise, which is produced by the Phoenix Hardware Mfg. Co., of Buffalo, N. Y., is slightly different and is much smaller for the reason that it is intended to serve on occasion as a hand vise. There is a plate that is attached to the front edge of the bench and proper clamps are provided to attach the vise. This vise, however, is only one of a great number of different types produced by the Phoenix company.

### Blacksmith's Parallel Vise.

Fisher & Norris, of Trenton, N. J., which manufactures blacksmith's anvils as well as a number of different styles of vises, also produces a vise of this kind, though it differs from the others in that the jaws are arranged to come together with a parallel motion. Just how this is done is best made plain with the aid of the illustration, which shows the lower supplementary spiral and the miniature chain which operates it. Several sizes of this vise are made, the smallest having jaws measuring 41/2 x 1 inches and weighing 65 pounds and the largest having jaws measuring 8 x 11/2 inches and weighing 210 pounds.

Although practically all of the vises that have been described are of standard types, they do not by any means repre-



VARIETY IN PIPE VISES

sent all the variety that exists. Both the Blissfield Motor Works, of Blissfield, Mich., and the Barbour-Stockwell Co., of Cambridgeport, Mass., for instance, produce vises which are widely different from any of those that have been described.

### Work Can be Held at Any Angle.

The Davenport vise, which is produced by the Blissfield company, is intended for drill press, planer, milling machine. shaper or straight bench work, provision being made for its attachment to these various machines as well as to the bench. The tilting arrangement is simple and permits of the vise being used at any angle from the horizontal to the perpendicular, and at any angle the supporting arms do not interfere either with the work in the vise or the manipulation of the jaws. In other words, work may be put in the vise, or taken out of it, without regard to the angle of inclination. The jaws measure 2 x 5 inches and the opening is six inches; the weight of the vise is 40 pounds.

The vise produced by the Barbour-Stockwell Co. is essentially a tool for woodworkers and is included by reason of the fact that in the average garage or repair shop there generally is a greater or lesser amount of woodwork that cannot be properly held in an ordinary machinist's vise. The mechanism of the vise is simple and is so arranged that when necessary the jaws can be brought together or separated quickly without using the screw. The vise, in other words, is a quick-acting one; it is made in several sizes with jaws measuring from six to 14 inches and with the same opening-namely, 12 inches-for all.

### Vises for Pipes and for Wood.

If a woodworker's vise should find a place in the well-equipped shop, the same can be said of a pipe vise, and, as a matter of fact, the latter is likely to prove more useful than is the former. Probably the best known type of pipe vise is the Armstrong type, such as is produced by the Oswego Tool Co., of Oswego, N. Y., for instance. The accompanying illustration makes the construction and operation of the tool so plain that there scarcely is need for explanation. Suffice it to say that in the smallest size produced, pipes ranging in diameter from the very smallest up to 212 inches can be gripped; the largest size holds pipe varying from 112 to six inches in diameter.

The Jarecki pattern pipe vise-it is made by the Jarecki Mfg. Co., of Erie, Pa.—differs from others in nearly every respect, as the accompanying picture makes plain. One of the distinctive features of the vise is that the beam which

holds the upper jaw is hinged, making it possible to place pipe in the vise at any point. Not the least important of the advantages of the side opening is that it permits pipe to be held while fittings are screwed on either end and facilitates the taking apart of old pipe work.

The Saunders improved swivel pipe vise, which is produced by D. Saunder's Sons, Inc., of Yonkers, N. Y., is designed for a slightly greater range of work than the others. It is neither sideopening nor top opening, as the illustration shows. However, once the pipe is placed in its jaws, it may be turned sidewise or up and down at the will of the operator to any position that will permit him to work to the best advantage. When the vise is placed in the desired position, it is tightened so that it cannot move simply by tightening the top bolt. There is only one adjustment.

#### Holds Pipe Without Marring it.

Because of their construction, it is obvious that most pipe vises must mar the pipe held in them to a greater or lesser extent, and though this may be a matter of small importance where the pipes are not exposed, brass pipes and those that are decorative as well as useful are not improved during fitting operations if an ordinary vise is used. To obviate this difficulty, the Orange Machine & Mfg. Co., of Orange, N. J., has developed the vise that is shown by the accompanying illustration. As the picture makes plain, the screw wedges the pipe down into a V-shaped socket where it is held firmly without being marred. The one size that is made will hold pipes ranging in diameter from 1/8-inch to 2 inches. Another important advantage of the Orange vise is that it is claimed not to crush pipes that are held in it.

The proper place on a bench for the vise is just over a leg, so that it will have a solid foundation. No matter how heavy the bench may be, there is a certain amount of spring to it, and this is least just over a leg. The difference is especially noticeable when chipping.

### Bad Results Follow Poor Work.

One of the things that should be remembered when doing repair work or making adjustments about a car is that if a given part or set of parts did its work properly once, it will do so again if the conditions are made the same as at first. If abnormal conditions are created by wrong assembling, for instance, proper functioning cannot be expected. Therefore it is always the part of wisdom to make sure that reassembling has been properly done before starting anything more radical in case of trouble with anything that has been taken apart, as for cleaning.

To cite rather an extreme case, though not an impossible one, a valve lifter group might be put together with the lifter screwed up too high, so that the valve would not close. In such a case the proper procedure would, of course. be to restore the original condition by readjusting the lifter, rather than by filing off the end of the valve stem.

### Two Cities Attack Taxicab Companies.

"Privileged" cab stands and their leasing to big taxicab companies, which was one of the predominant points in New York City's recent and successful agitation for a new traffic ordinance, 15 one of the points at issue in a similar agitation in Cleveland, O. As was the case in New York, it is charged that the stand privilege amounts virtually to a monopoly. It is also charged that the companies are not taking out licenses as required by law.

In Houston, Tex., also, the taxicals companies have become an object of popular attack; the Travelers' Protective Association claims that the limit within which cabs must charge not more than 50 cents is so small as not to extend beyond the business district. If a man wants to ride to his home, they state, it costs considerably more.

### Bosch Generator for Lighting Only.

Although the Bosch Magneto Co. has developed a very clever electric lighting system, the generator that forms such an important part of it is not intended to replace either the Bosch magneto or any other magneto, as might have been inferred from the description which appeared in Motor World last week. The Bosch company always has been a firm believer in the three-unit system for electric lighting, ignition and starting. and therefore it should be plain that though the new electric lighting generator can be put in the place of a Bosch magneto it will not take its place for ignition purposes. Nevertheless, the fact remains that it is interchangeable with the standard Bosch magneto but only insofar as its base is concerned.

### Substitute for a Real Anvil.

One of the most unsatisfactory things in the world is to try to do hammer work without something for an anvil. Without a weighty object as a backing little can be accomplished. While most any heavy chunk of iron or steel answers the purpose, there is nothing much better than a section from an old steel rail.

### WHEN ONE CAN'T USE OWN NAME IN BUSINESS

# If a Man's Name is Smith Can He Trade as Smith?—Sometimes "Yes" and Sometimes "No"—Attorney Untangles Doubtful Points as to a Man's Right to His Cognomen—Trade-marks and Rights.

If John R. Smith builds up a big business in Smith's oils and lubricants, can Peter B. Smith enter the trade with a line of Smith's oils and lubricants?

If John R. Smith makes the trade-mark of his line a familiar object in the trade, can Peter B. Smith use a similar mark under any conditions?

To merchandisers and manufacturers these are likely to prove perplexing questions. It often has been asked, "Hasn't a man the right to use his own name in business?" and the courts have answered "Yes" and "No."

Only last week the United States Circuit Court of Appeals for the Seventh Circuit, in the Hanover Star Milling Co. vs. the Allen & Wheeler Co., decided that both could use the trade-mark "Tea Rose" on flour so long as they did business in territories which did not conflict; this really was the case, one doing business in the South and the other in the North.

### Two Extremes that Are Wrong.

As to the use of a man's own name, a New York City court recently ordered a man named Shinasi to quit the cigarette trade because a competitor has built up a big business about that name, while in other cases two men have been permitted to use the same name; these apparent inconsistencies may be reconciled briefly by the statement that these things are permissible so long as unfair competition does not enter. Several of the vague points in this connection were made plain recently in Printers' Ink by Oscar M. Wolff, a Chicago attorney. He well expressed the situation when he said, "The average business man has the vaguest and most hazy ideas as to his rights in the use of his name.

"On the one hand, we meet men who think that they have the most free and unrestricted right to use their family names in whatever manner they please, irrespective of any possible conflict with other persons of the same name." Wolff continued. "On the other hand, there are persons who think that because one man bearing a certain family name has entered a particular line of trade, all other persons of the same name are entirely

barred from that trade. Neither of these views is correct. As usual, the truth lies somewhere in between.

### Pirates Who Will Take Anything.

"The question of the right in a family name and the degree of protection which will be accorded it frequently confronts business men and advertising men when new enterprises are being organized or when old-established houses contemplate expansion. E. T. Welch, of the Welch Grape Juice Co., in his recent article in Printers' Ink, argues that in naming a business or article of merchandise, coined words are preferable to family names. But coined words and fanciful names have been imitated and the ensuing litigation is often as long and expensive as in cases involving the use of family names. When a commercial pirate wants to infringe upon a successful business, the character of the name makes little difference. And there are certainly many decided advantages in identifying your own name with your business and making your own personality known to the trade and to the purchasing public.

"The courts have been called upon to decide many cases involving family names. A statement of the principles underlying these cases may assist some puzzled advertising men who are called upon to advise their clients upon a choice of names.

### Principle of Unfair Competition.

"As has been pointed out, this question is one phase of the law of 'unfair competition.' The gist of unfair competition is this: No man may induce people to buy his goods in the belief that they are actually buying the goods of another person; no merchant or trader should be allowed to pass off his merchandise or his establishment or individuality as that of another trader. In England they do not use the phrase 'unfair competition.' The phrase 'passing off,' which they use, is possibly more suggestive than our own term.

"A dealer may attempt to pass off his goods by imitating whatever is the distinctive feature of another man's goods. And as family names are used as business names, so they may become the instrument of unfair competition or passing off.

"Now, what are the principles upon which cases of unfair competition in the use of family names are determined?

"In the first place, every man has an inherent and fundamental right to do business under his own name. No reviewing court has ever entirely prohibited a man from the use of his name. On the contrary, in practically every case upon the subject, the courts have reiterated the doctrine that a man must be permitted to use his name in his business.

"The earliest cases involving the use of family names which were decided in this country arose in New York. One of these was the Meneely case, decided in 1875. In 1826 Andrew Meneely established a foundry at West Troy, N. Y., for the manufacture of bells and church chimes. After his death two of his sons continued the original business. Another son went into the business at Troy, N. Y.

### Some Names that Were Used Twice.

"The two sons at West Troy brought action against their brother, and the trial court restrained him from the use of the name Meneely in the business of bell casting at Troy. The Court of Appeals reversed the decree, saying: 'Every man has an absolute right to use his own name in his own business, even though he thereby interferes with or injures the business of another person bearing the same name, provided he does not resort to any artifice or contrivance for the purpose of producing the impression that the establishments are identical, or does not do anything calculated to mislead the purchasing public.'

"The United States Supreme Court held to the same effect in a case involving the name Remington as applied to typewriters. In 1873 E. Remington & Sons, makers of the Remington firearms, commenced the manufacture of the original typewriter—the Remington. In 1886 this branch of the business, with the trade name and the good will attaching thereto, was transferred to Wyckoff, Seamans & Benedict.

"In 1894 Franklin and Carver Reming-

ton, sons of a former president of E. Remington & Sons, organized the Remington-Sholes Co., a corporation, to manufacture the Rem-Sho machine. The company advertised that its machine was not the Remington Standard Typewriter and had no connection therewith. Notwithstanding this fact, Wyckoff, Seamans & Benedict claimed that the use of the name Remington in connection with typewriters caused them great loss, and sought to enjoin such use of the name. The United States Supreme Court said:

"'A man's name is his own property and he has the same right to its use and enjoyment as he has to that of any other species of property. If such use be a reasonable, honest and fair exercise of such right, he is no more liable for the incidental damage he may do a rival in trade than he would be for an injury to his neighbor's property by the smoke issuing from his chimney, or for the fall of his neighbor's house by reason of necessary excavations upon his own lands."

#### Simple Truth is Not Unlawful.

"In a leading English case, Thomas Turton & Sons, well-known and old-established steel manufacturers at Sheffield, attempted to restrain John Turton and his two sons from carrying on a similar business at the same place under the name of John Turton & Sons. In denying an injunction, the court said:

"'The plaintiff's proposition goes to this length: that if one man is in business and has so carried on his business that his name has become a value in the market, another man must not use his own name. If that other man comes and carries on business, he must discard his own name and take a false name. The proposition seems to me so monstrous that the statement of it carries its own refutation. Therefore, upon principle, I should say it is perfectly clear that if all that a man does is to carry on the same business and to state how he is carrying it on, that statement being the simple truth, and he does nothing more with regard to the respective names, he is doing no wrong.'

### "Garnished" the Use of His Name.

"These cases are comparatively simple. In each the defendant was making an honest use of his name. In so doing the defendant was entirely within his rights. But in most of the cases which have come to the attention of the courts the defendant has done more than use his name. He has, as was said in the Turton case, 'garnished' the use. That is, besides

using a similar name, the defendant has done other things which tended to create confusion between his goods or his business and that of a competitor.

"This gives rise to the second principle covering these cases. No man must make his name the instrument of fraud or deceit. No man may endeavor to pass off his goods as those of a competitor by the manner in which he uses his name.

"Croft vs. Day, decided in 1843, is a famous English case on the law of unfair competition and is the first case in which the courts were called upon to decide a man's right to use his own name.

### Must Not Deceive and Defraud.

"Day & Martin were manufacturers of shoe blacking, wno established their business about the year 1800. The business was continued during the lifetime of both of the original partners, and after the death of the last survivor was carried on by Croft under the original name and at the original stand, 97 High Holborn. In 1843 a young man named Day, a nephew of the late partner of that name, made some indefinite arrangement with a friend of his named Martin for the use of his name, and thereupon set up in the same trade under the name of Day & Martin at 901/2 Holborn Hill. He adopted bottles and labels for his trade which bore a striking resemblance to those of the original concern. Mr. Croft brought an action for an injunction against Day, the only active party in the new business. In deciding the case, the judge said:

### Old Law that Holds Good Today.

"The defendant has a right to carry on a bottling business honestly and fairly. He has the right to use his own name, and I will do nothing to debar him from the use of that, but I must prevent him from using it in such a way as to deceive and defraud the public and obtain for himself at the expense of the plaintiffs an undue and improper advantage."

"The defendant was restrained from selling blacking purporting to be manufactured by Day & Martin in any bottle or with any label so designed as to represent that the blacking was the same as that manufactured by the original concern. The rule laid down in this old English case is substantially the law of England and the United States to-day.

"A case which well illustrates the limits of a man's rights in his name was decided in Massachusetts 25 years ago. William Le Page was the manufacturer of 'Le Page's Liquid Glue.' After establishing a profitable business, he organ-

ized the Russian Cement Co., a corporation, and transferred his business and good will to this corporation.

"After being connected with the corporation for about four years, he withdrew and established another business under the name of Le Page's Liquid Glue & Cement Co. He advertised his product as Le Page's Improved Liquid Glue, and stated that it was manufactured under the management of William M. Le Page, the original inventor and manufacturer of Le Page's Liquid Glue. The Russian Cement Co. brought an action to restrain Le Page from engaging in the glue business under his own name. In deciding the case, the Massachusetts Supreme Court said:

#### Conditional Use of His Own Name.

"'Everyone has a right to use his own name honestly in his own business for the purpose of advertising it, even though he may thereby incidentally interfere with and injure the business of another having the same name. In such case the inconvenience or loss to which those having a common right to it are subjected is a damage for which there is no remedy. But although he may thus use his name, he cannot resort to any artifice or to any act calculated to mislead the public as to the identity of the business firm or establishment, or of the article produced by them, and thus produce injury to the other beyond all that which results from the similarity of name.'

"Le Page was enjoined from advertising the product of his new concern as 'Le Page's Improved Liquid Glue' or 'Le Page's Liquid Glue,' or from calling his company 'Le Page Liquid Glue Co.' He was, however, permitted to describe his product as liquid glue and to state that he was the manufacturer thereof.

"Perhaps the best known American cases upon the subject are those involving the Baker chocolates and Rogers's silverware. There have been dozens of cases involving the name of Rogers, and almost as many involving the name Baker.

### One Way of Preventing Deception.

"In one of the first of the Baker cases a Virginian named Baker, who went into the chocolate business with a former salesman of Walter Baker & Co. Ltd. was permitted to use his name, but only in connection with his given name, and was compelled to mark upon his packages in prominent letters. 'No connection with the old chocolate manufactory of Walter Baker & Co., Ltd.' This case gave rise to a form of relief which is

### MOTOR WORLD

now very popular with the courts in family-name cases. The manufacturers of Rogers silverware, Hall's safes, Reed cushion shoes, Chickering pianos, Williams soaps and many other articles have been able to compel competitors of the same name to mark their wares with phrases similar to that in the Baker case.

"These cases will illustrate the governing rules in family-name cases. There are a number of incidental questions, such as the rights of a defendant in a family-name business; the right to transfer a business bearing a family name; the right to use a family name as part of a corporate name. Space does not permit the discussion of the cases on these points.

"Mention might, however, be made of the line of cases suggested by the experience of the Johnson Educator Food Co. As explained by Mr. Barbour, a man by the name of Johnson having no real interest in a competing business was given a nominal interest by the real owners, merely that they might trade under his name. The actual owners were employing Johnson merely that they might make his name an instrument of fraud and unfair competition.

### Nominal Use of Name a Fraud.

"Both the American and English courts have held that such use of a name is a badge of fraud and should be enjoined.

"When Napoleon Sarony, the wellknown New York photographer, died in 1896, his business and good will were sold by his executor. The purchaser continued the business under the original name. Subsequently another photographer organized a corporation under the name Otto Sarony & Co. and issued to Otto Sarony, a nephew of the late photographer, one share of stock, on condition that he should permit the use of his name in the business of the new corporation. The new corporation engaged in business in the immediate neighborhood of the original Sarony studio.

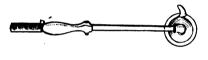
"Upon application of Napoleon Sarony's successor, an injunction was granted enjoining the use of the name Sarony in connection with the new business. The court said that the organization of the new corporation and the transfer of one share of stock to Otto Sarony was a perfectly apparent fraud. It was to enable the corporation to trade on the established name and reputation of Sarony. It was not an attempt of a man to transact a legitimate business in his own name or to transfer to another the good

will and the trade name of an established business.

"Imitation and litigation will always be among the penalties of commercial success. If a man be successful, there will always be unscrupulous dealers who will attempt to profit by his enterprise. This will be true whether the business has been built up under a trade-mark, a fanciful name or a family name. From infringements and imitations the successful merchant will escape only by luck, and not by reason of the character of the name he has chosen. No matter what the name may be, the courts will endeavor to protect his good will."

### Substitute for the Lifting Magnet.

The little lifting magnet that so often is useful for fishing things out of a cylinder or crankcase may not have inspired the design of the suction lifter shown in the accompanying illustration and used in the shops of the Westinghouse Electric & Míg. Co., of East Pittsburgh, Pa..





WESTINGHOUSE SUCTION "PICK-UP"

but the fact that both are in the light lifting class establishes a sort of relationship. The Westinghouse lifter is used to pick up stamped steel pieces—electric motor laminations—from under the dies in the presses; but there is no apparent reason why the device cannot be applied to the work of the automobile manufacturer, and of the repair man, too, for that matter.

The lifter consists of a suction cup, faced with rubber, on the end of a handle, which is hollow and is connected, at the opposite end, with a suction hose leading to an exhausting pump. A small hole in the cup communicates with the hollow handle and there is a valve, operated by a little button under the operator's thumb, that affords control. The cup is placed, face down, on the object to be lifted and the valve pressed, when the suction acts like a magnet and holds the object so long as the valve is held open.

The little hook on the edge of the cup is used to dislodge small pieces of metal that may be left clinging to the stamping. Larger lifters are made for larger work. In addition to decreasing the number of accidents, the adoption of the suction

lifter has materially increased the output of the machines.

### California Refunds License Expressage.

The desire to obtain their rights rather than any mercenary motive undoubtedly is responsible for the satisfaction which the car owners of California feel in the announcement that the State is to refund the express charges which numerous car owners paid on their license tags; the tags have been sent out by Wells-Fargo express and the charge to San Diego, one of the most distant points from the capital, is 45 cents.

When the car owners began to get these little "collect" shipments a cry went up; someone investigated and found that the automobile law provides that the tags shall be issued "without charge" to those who paid their license fees. It was maintained that the tags should have been sent free of charge by parcel post, and this is now being done.

Furthermore, Superintendent W. R. Ormsby of the Motor Vehicle Division of the State Engineering Department has announced that he will refund to those who paid express charges.

#### Runaway Car Gets "Cop" in Trouble.

Although he did his best to stop a runaway automobile in Newark, N. J., Patrolman Cornelius Hearn received no thanks; instead he is the defendant in a suit brought by Charles Musgrave, who claims that the runaway car knocked him down. If Hearn had not tried to stop the car he would have been censured and perhaps been brought up on charges and, as it is, he has not escaped.

The car was running along Crange street when Hearn saw it and he leaped in; not knowing how to stop the vehicle he grasped the steering wheel and hoped the gasolene would run out shortly. He dodged one trolley car, turned a corner and started for the 5th Precinct station, but within a block of the station had to dodge another car, and in so doing ran up onto the sidewalk and struck Musgrave. The latter demands \$5,000.

The court admitted that an interesting question was involved in that the policeman was not familiar with automobiles and was doing his duty at the time.

### Dealers Must Pay for Fur Coats.

Although J. A. Seitz & Co., an accessory and supply firm in Syracuse, N. Y., claimed the fur coats it bought of Pike & Rabinowitch were defective, the suit brought by the latter was successful and judgment was taken this week in the Supreme Court for New York county; the amount is \$800.86.



1,077,176. Vehicle Tire. James II. Tucker, Petersburg, Va. Filed Aug. 1, 1912. Serial No. 712,758. (Sectional cushion tire.) 7 claims.

1,077,192. Automobile Lamp. Theodore P. Driver, Melrose, Mass. Filed Nov. 7, 1912. Serial No. 729,944. (Lamp receptacle and contacts.) 6 claims.

1.077,197. Automobile. Edward R. Hewitt, Ringwood, N. J., assignor to Hewitt Motor Co., New York, N. Y., a corporation of New York. Filed May 2, 1907. Serial No. 371,456. (Spring mounting for radiator.) 2 claims.

1,077,275. Tire-Protector. Ralph V. Hastings, Chicago, Ill. Filed Jan. 19, 1912, Serial No. 672,172. Renewed Sept. 18, 1913. Serial No. 790,581. (Resilient tread blocks with metal plates.) 2 claims

1,077,282. Locking Ring. Walter R. Kelley, Pawtucket, R. I. Filed July 14, 1911. Serial No. 638,488. (Split locking ring for demountable rims.) 4 claims.

1,077,291. Cranking Device for Internal Combustion Engines. John F. O'Bert, I.os Angeles, Cal. Filed Aug. 7, 1912. Serial No. 713,760. (Anti-kick starting crank.) 3 claims.

1,077,292. Starting Device for Internal Combustion Engines. John F. O'Bert, I.os Angeles, Cal. Filed Oct. 8, 1912. Serial No. 724,610. (Anti-kiek cranking mechanism.) 2 claims

1,077,310. Vehicle Tire. Benjamin Coplin Seaton, Detroit, Mich. Filed Dec. 2, 1909. Serial No. 531,104. (Metal-and-rubber tire construction.) 8 claims.

1,077,314. Rotary Gas-Engine. Walter F. Stern, Gap, Pa., assignor to Stern Mig. Co., a firm composed of Walter F. Stern, John A. Shank and Samuel J. Shank, Lancaster, Pa. Filed April 29, 1911. Serial No. 624,208. (Turbine type motor.) 7 claims.

1,077,317. Valve for Internal-Combustion Engines. Carl E. Swenson, Rockford, Ill. Filed July 8, 1912. Serial No. 708,154. (Rotary valve system.) 4 claims.

1,077,348. Speed Control for Motor Cars. Russell Huff, Detroit, Mich., assignor, by mesne assignments, to Packard Motor Car Co., Detroit, Mich., a corporation of Michigan. Filed May 27, 1907. Serial No. 375,961. (Governor control system.) 1 claim.

1,077,371. Power Transmission Mechanism. Arthur R. Selden, Rochester, N. Y. Filed June 14, 1912. Serial No. 703,758. (Combination of gearing and hydraulic system.) 5 claims.

1,077,381. Internal Combustion Engine. John Willoughly, New York, N. Y., assignor of one-half to George W. Bayley, Brooklyn, N. Y. Origimal application filed June 9, 1911, Serial No. 632,153. Divided and this application filed Jan. 4, 1912. Serial No. 669,306. (Two-cycle motor with two-diameter piston and cylinder.) 2 claims.

1,077,384. Vehicle Wheel. Joseph Bray, Arlington Station, Cal. Filed Oct. 23, 1911. Serial No. 656,320. Wired with springs coiled around spokes.) 5 claims.

1,077,461. Antiskid Attachment for Automobile Tires. Joseph G. Florack, Rochester, N. Y. Filed Oct. 14, 1912. Serial No. 725,631. (Metal tread pieces with connecting chains.) 4 claims.

1,077,407. Automobile Tire. Albert B. Hollenbeck, Sidney, N. Y. Filed June 8, 1910. Serial No. 565,827. (Inner tube protector.) 1 claim.

1,077,410. Spring Wheel. Peter M. Kling. Elizabeth, N. J. Filed Oct. 20, 1209. Serial No. 522,645. (Transverse springs between inner and outer rims.) 5 claims.

1,077,424. Variable Speed Gear. James Joseph Myers, Thurles, Ireland. Filed Apr. 24, 1911. Serial No. 624,049. (Planetar) gearing.) 4 1,077,430. Resilient Wheel. Madison B. Ray and Edward K. Henderson, Nederland, Colo. Filed June 25, 1913. Serial No. 775,747. (Wheel with cylinder-and-piston spokes.) 2 claims.

1,077,434. Spring Wheel. Arthur D. Seibert and Burton R. Andrus, Pendleton, Ore. Filed Apr. 14, 1913. Serial No. 761,019. (Wheel with spring-cushioned hub and torque springs.) 3 claims.

1,077,450. Controllable Headlight for Automobiles. Francis G. Anspach, Deerfield, Mich., as signor of one-third to Vernor B. Cannon, Deerfield, Mich. Filed July 16, 1912. Serial No. 709, 763. (Headlight moved through connection with steering gear.) 15 claims.

1,077,454. Variable Speed Transmission Gearing. Alexander II. Cooke, New York, N. Y. Filed May 11, 1912. Serial No. 696,628. (Hydraulic controlling system.) 7 claims.

1,077,472. Pneumatic Spring. Josef Hoffman, Baumaroche, Switzerland. Filed uly 13, 1912. Serial No. 710,252. (Pneumatic cushion of diaphragm type.) 4 claims.

1,077,504. Tire. Gottlieb Anger, McKees Rocks, Pa., assignor of one-half to Theodore A. Sprague, Bellevue, Pa. Filed Oct. 28, 1912. Serial No. 728,185. (Wheel with flexible metal rim supported by radial helical springs.) 2 claims.

1,077,546. Vehicle Brake. Stephen R. O'Brien, Pittsburgh, Pa. Filed Mar. 24, 1913. Serial No. 756,461. (Ground-contact emergency brake.) 1

1,077,549. Platform for Engines. Emiel Pahl, Sister Bay, Wis. Filed May 27, 1912. Serial No. 700,093. (Motor mounting for agricultural tractor.) 2 claims.

1,077,570. Auto Dumping Truck. Ernest Henry Vincent, Emeryville, Cal. Filed June 20, 1911. Serial No. 634,324. (Body mounted on rollers and moved by screw and nut.) 1 claim.

1.077,598. Self-Propelled Vehicle. Clarence W. Coleman, Westfield, N. J.; Katharine Coleman, admisistratrix of said Clarence W. Coleman, deceased. Filed May 4, 1909. Serial No. 493,819. (Motor plow.) 3 claims.

1,077,612. Resilient Wheel. Gilbert A. Leitzman, Clayton, Ind. Filed July 25, 1912. Serial No. 711,420. (Wheel with spring-and-plunger spokes.) 4 claims.

1,077,657. Means for Issuing Directions Concerning Care of Motor Vehicles. George S. Van Voorhis, Brookline, Mass. Filed Jan. 25, 1913. Serial No. 744,257. (Automatically unwound paper strip with directions for care of car.) 1 claim.

1,077,679. Car Motor. William F. Davis, Kansas City, Kan., assignor to McKeen Motor Car Company, a Corporation. Filed Oct. 10, 1905. Serial No. 282,154. (Gasolene motor drive system for rail vehicles.) 14 claims.

1,077,718. Combustion Engine. Hugo Junkers, Aix-la-Chapelle, Germany. Filed Oct. 7, 1907. Serial No. 396,280. (Intensive charging system for two-cycle motor.) 5 claims.

1,077,781. Shock Absorber. Carl Yeager, Birdsboro, Pa. Filed Mar. 15, 1913. Serial No. 754,-438. (Piston and cylinder shock absorber.) 2

1,077,782. Resilient Tire. David A. York, Northgrove, Ind. Filed Dec. 7, 1912. Serial No. 735,484. (Cushion tire with transverse openings.) I claim.

1,077,793. Internal Combustion Engine. Henry Lowe Brownback, Norristown, Pa. Filed Apr. 6, 1912. Serial No. 688.950. (Piston valve motor.) 2 claims.

1,077,794. Four-Wheel Drive. Seabury F. Bruner and Harley F. Hardin, Marion, Ind. Filed Apr. 15, 1912. Serial No. 691,054. (Chain-and-gear drive to pivoting wheels.) 3 claims.

1.077,795. Starting Valve for Internal Combustion Engines. Huns Theodor Bruns, Nuremberg, Germany, Filed Dec. 23, 1909. Serial No. 534, 587. (Valve for admitting compressed air.) 1 claim. 1,077,799. Vehicle Wheel. Alvie R. Burkett, Manns Choice, Pa. Filed Dec. 7, 1912 Serial No. 735,566. (Thick tread tire with metal flanges.) 1 claim.

1,077,811. Internal Combustion Motor. Jasper F. Cullin, Clinton, Mich. Filed June 21, 1912. Serial No. 705,066. (Two-cycle sleerevalve motor.) 10 claims.

1,077,823. Lubricating System for Gas Engines, Julian P. Farnam, Minneapolis, Minn., assignor, by mesne assignments, to Emerson-Brantinghan Company, Rockford, Ill., a Corporation of libnois. Filed Feb. 9, 1912. Serial No. 676,527. (Pump oiling system with overflow regulation.) 3 claims.

1,077,841. Engine Starter. John Deam Kneedler, Sioux City, Iowa, assignor of one-third to Buel Couch and one-third to N. T. Hans. Sioux City, Iowa. Filed Sept. 17, 1912. Serial No. 720,884. (Compressed air starting system.) 2claims.

1,077,858. Engine Starter. Gilson W. Koth, Packson township, Brown county, Ind., assignor, by direct and mesne assignments, to George H. Evans, Evansville, Ind. Filed June 10, 1910. Serial No. 566,131. (Compressed air starting system.) 4 claims.

1,077,858. Motor Plow and Traction Engine. Louis T. Hagan, Winchester, Ky., assignor to Hagan Gas Engine & Mfg. Co., Winchester, Ky., a CSorporation of Kentucky. Filed Aug. 10. 1911. Serial No. 643,387. (Agricultural tractor with power system on one section and plows on another.) 18 claims.

1,077,905. Automobile Muffler. Edward L. Dewey, Whiting, Ind. Filed Mar. 10, 1913. Serial No. 753,326. (Multiple-tube muffler.) 11 claims.

1,077,910. Carburetter. William H. C. Iliggins, Ja., Laporte, Ind. Filed Oct. 14, 1910. Serial No. 586,975. (Carburetter with water spray and no float.) 9 claims.

1,077,925. Drive Wheel Mounting for Vehicles James Scripps Booth, Detroit, Mich. Filed Feb. 10, 1913. Serial No. 747,243. (Dead axle driving system.) 8 claims.

1,077,933. Automobile. Edward R. Hevitt, Ringwood, N. J., assignor, by mesne assignments to International Motor Company, New York. N. Y., a Corporation of Delaware. Filed Dec. 30, 1910. Serial No. 600,028. (Dashboard, radiator and motor mounting.) 8 claims.

1,077,956. Internal Combustion Engine. Charles H. Fox, Bakersfield, Cal. Filed Sept. 24, 1907. Serial No. 394,417. (Motor with separate cuarge-pumping piston.) 14 claims.

1,077,980. Hydraulic Transmission Apparatus. Henry Selby Hele-Shaw, London, England Filed May 20, 1911. Serial No. 628,512. (lfydraulic transmission with radial cylinders and plungers.) 5 claims.

1,077,992. Internal Combustion Engine. John James McLean, Moose Jaw, Saskatchewan, Canada. Filed Apr. 4, 1913. Serial No. 758,963. (Motor with two pistons in each cylinder.)

1,077,994. Vehicle Wheel. William A. Milam. Dallas, Tex. Filed July 30, 1912. Serial No. 712. 222. (Wheel with helical springs enclosed in spokes.) 2 claims.

1,078,032. Axle Drive. Harry M. Boyd. Creston, Iowa. Filed Sept. 11, 1912. Serial No. 719. 724. (Universal joint system for driving steering wheels.) 2 claims.

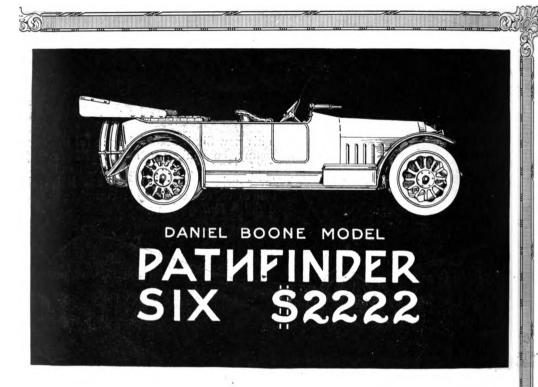
1,078,042. Automobile Control Mechanism. Henry Ford, Detroit, Mich. Filed Dec. 4, 1999. Serial No. 531,286. (Ford control system.) 15 claims.

1,078,105. Automobile Lock. Warren G. McNab, Wyandotte, and Robert J. McCleery, Detroit, Mich. Filed Jan. 13, 1913. Serial No. 741,730. (Permutation lock for automobiles)

1,078,107. Brake Actuating Mechanism. Theodore N. Nygren, Minneapolis, Minn. Filed Apr. 7, 1913. Serial No. 759,324. (Brake equalizing system.) 5 claims.

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# The Car of Today and Tomorrow

This Pathfinder model has every up-to-date feature that is demanded by purchasers.

It is built in the Pathfinder way, so it will make friends for itself, its dealers and its factory.

Unless a car repeats, orders cost the dealer too much. Once a Pathfinder owner, always a Pathfinder owner.

Write today for more complete description of our line and also an outline of the Sales Policy which will make your agency profitable.

Your name on the margin will do.

### THE MOTOR CAR MFG. COMPANY

1138 DIVISION ST., INDIANAPOLIS, U.S.A.

# 80 1/2 PER CENT

of all electrically equipped gasoline cars exhibited at the Chicago Show contained



# STORAGE BATTERIES

80 ½% at Chicago—78% at New York
No other accessory has ever yet been accorded
such universal recognition of superior merit as
the crass

WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd St.

Detroit Branch: 736, 738 and 740 Woodward Ave.

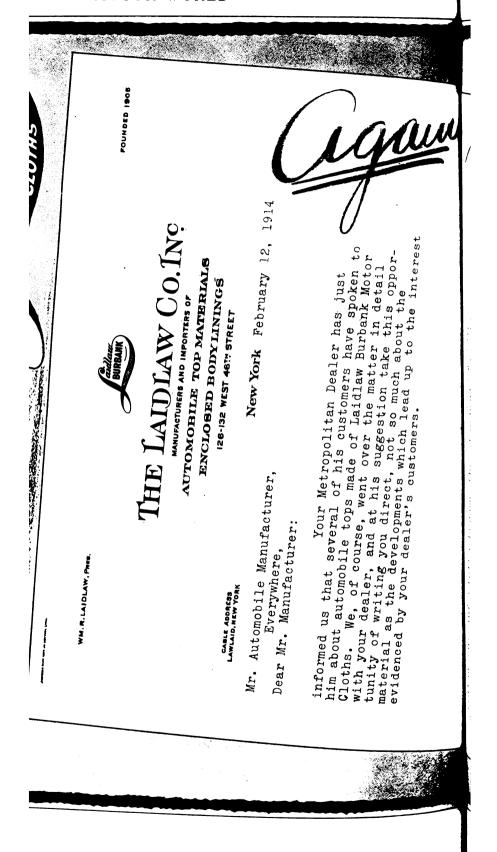
Chicago Branch: 2241 Michigan Ave.

San Francisco Branch: 243 Monadnock Bldg.

Indianapolis Branch: 438 and 439 Indiana Pythian Bldg.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

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fabric for the importers of foreign chassis, who had their bodies built here'by such famous body builders as Brewster

& Co.,

Laidlaw Burbank Cloths became the standard automobile top

Between 1909 and February 1913

Healy & Co., The Holbrook Co., Locke & Co., Moore &

Munger Co., J. M. Quinby & Co., etc., which bodies were,

course, built for the most exacting and discriminating



The large manufacturers of automobiles took only a passing interest in Laidlaw Burbank Cloths because they were considered revolutionary in character and high in price as compared with those generally used.

the tops for their entire 1915 production of open cars. cloth is embodied in the fact that The Cadillac Motor Car Co. shown at the Importers' Salon for three successive years in-cluding 1913 was equipped with a Laidlaw Burbank Cloth top has just placed their second order for Laidlaw Burbank Cloth evidently produced a deep impression upon the more keenly observant American Manufacturers; because in February 1913 Burbank to equip their entire 1914 production of open cars with tops. Positive approval of the service given by the The Cadillac Motor Co. placed an order for enough Laidlaw

tigating of Laidlaw Burbank Cloth and its use on your cars?

Very truly yours,

THE LAIDLAW CO., INC.

THE LAIDLAW CO., Inc.

126-132 West 46th St., New York

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# MOTOR WORLD

The Dealer's Paper



The Publication Serves the Manufacturer Best Which Helps the Dealer Most.

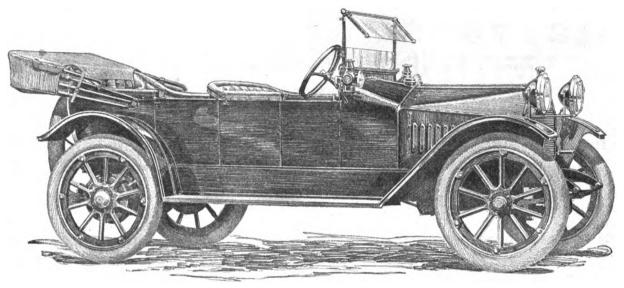
ALL advertising is an effect— an influence. In the autoan influence. In the automobile business, any advertising campaign that is not designed to have a strong dealer effect and a strong influence upon the trade is poorly, even thoughtlessly planned and will fall far short of what it might have accomplished. This is so because advertising effort must go before and parallel to selling effort, and trade advertising should be your intimate personal connection with your actual or potential selling force.

### Motor World is the Dealers' Favorite Trade Paper

because it helps them, and by so doing gives double the influence to its advertising, logically.

Advertising is done for effect. Dealer effect advertising should be done in the dealers' paper.

# Hupmobile



"32" Touring Car or Roadster \$1050 f. o. b Detroit

In Canada, \$1230 f. o. b. Windsor Factory

EQUIPMENT—Electric horn; rain vision, ventilating windshield; mohair top with envelope; inside quick adjustable curtains; speedometer; cocoa mat in tonneau; gas headlights; oil side lamps; trimmings, black and nickel.

With regular equipment and additional equipment of two-unit electric generator and starter; electric lights; oversize tires, 33 x 4 inches; demountable rims, extra rim and tire carrier at rear. \$1200 f. o. b. Detroit.

In Canada, \$1380 f. o. b. Windsor Factory

### A Composite of the Best Engineering Authority

One of the things you noticed at the Show was the preponderance of the new style bodies, aptly christened the "Stream Line."

We were not clever enough to invent the name—we wish we were.

But our engineers were advanced enough to develop this type of body two years ago; and at the Chicago Show of 1912, the Hupmobile was the only car fitted with the stream line type.

Naturally it pleases us to see so many of our costlier and more luxurious brothers falling into line and advocating this style.

A feature, too, that probably impressed you was the almost unanimous tendency toward motors of the long-stroke type.

The Hupmobile vindicated the superior pulling qualities of that type of motor two years ago, and at the Chicago Show of the same date was the only car that exhibited the long-stroke design—with the exception of one or two makes that have since passed out of the market.

- When you looked over starting and lighting equipments, you found the Hupmobile, as usual, in high class company.
- Of the seventeen makes that you will see equipped with the same starting and lighting system as the Hupmobile, four of them belong to the costliest types; and every one of the others thus equipped is higher priced than the Hupmobile.
- At the recent Paris and London Shows, six of the best known and most expensive cars manufactured in Europe were equipped with this same make of electrical equipment that the Hupmobile is using.
- We mention these things as a convincing illustration of our claim that in every department of mechanical excellence, quality is considered first, regardless of price.
- As a careful dealer who wants to give his customers the worth of their money, we feel sure that you will give every thoughtful consideration to the Hupmobile.

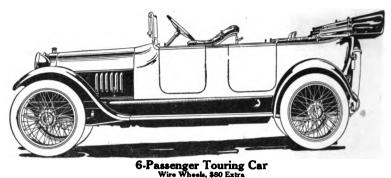
### Hupp Motor Car Company 1254 Milwaukee Avenue, Detroit, Michigan

The car of The American Family

### Chalmers The Master "Six"

\$2175

Fully Equipped
F. O. B. Detroit



### The Chalmers "Six" Sells Itself by Actual Performance

Many people have bought the new Chalmers "Six" without seeing it or riding in it. They have owned other Chalmers cars and know thorough satisfaction, so simply give their order for a new Chalmers each year. Others rely on the Chalmers name and the say-so of pleased owners and buy without trying out the Master "Six" in any way. Past performance is the guide of these buyers of the Master "Six."

But for those not familiar with Chalmers cars, who want to be sure of liking every feature of the new "Six," we have the Standard Road Test, a ride that searches every claim we make, tries out every part of the car, and includes a close examination of it to make clear every point of its design and construction,

We put the new "Six" fairly and squarely up to the buyer's own judgment. We put it

through its paces in every condition of road and traffic we can find. We do the "stunts" he wants the car he will buy to be able to do. We give it a strenuous test that proves it is really the master motor of them all.

We ask both prospective dealers and the dealers' customers to compare the actual performance of this car with any other on the market—and we place no limits to the price of our competition.

See for yourself if there has ever before been offered so great an automobile value. Here are the qualities, found together for the first time in the Chalmers "Six," which make it the master car. These are some of the things that have made it a profitable car for the Chalmers dealers. They entitle it to the consideration of every dealer not now handling a high-grade, medium-priced "Six."

Power Secured through a six-cylinder T-head motor (cylinders cast in blocks of three) with cylinder; triple heated carburetor and gas intake manifold, insuring full power from even the lowest grade gasoline. Valves in the new "Six" are extra large and of Tungsten steel, so hard they will never new more and will almost never need regrinding.

Quietness Made possible by fully enclosed valve mechanism (not a moving part of the motor can be seen from the outside); by large oval cams, working against Chalmers-design roller valve lifters; by painstaking workmanship and rigid inspection throughout.

Flexibility

Due to the smooth-running, powerful motor and Chalmers four-forward-speed transmission. With this construction you are enabled to select the right motor speed for gear shifting. No complicated auxiliary gearing necessary.

Absence of Vibration

The moving parts of the Chalmers motor are 40 per cent lighter than those generally used, due to the use of highest grade steels. The new tion is synonymous with wear.

Absence of vibration means long life—for vibration mean

Electric Starter

Entz System Chalmers-built, the simplest, fastest, surest electric starter on the market. One move starts your Chalmers "Six." This starter is noiseless in attached to the motor, making the Master "Six." a positively non-stallable car.

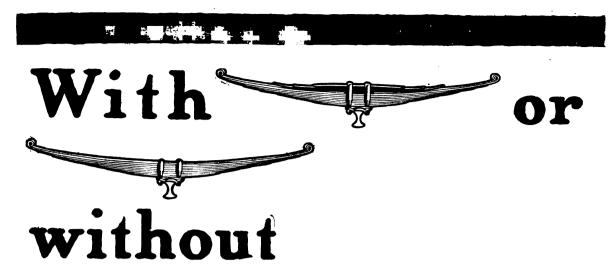
Beauty
Shield stay rods, etc. One look at the new Chalmers "Six" will convince you of its unusual beauty.

Convenience Entire control of the car from the driving seat; left-hand drive and center control; pressure system; all seats equally accessible from right or left side; automatically lubricated clutch; dash

The 1014 Chalance with a control; accessibility of all lubrication points.

The 1914 Chalmers "Six" is offered in six beau Iful body types, all interchangeable without adjustment of the chassis. There is a type to suit every need—a powerful, luxurious, economical car built complete in the Chalmers shops and backed by the Chalmers guarantee.

Chalmers Motor Company. Detroit



Comfort---easy riding is not to be found in shock absorbers---but in the flexibility and free action of your springs. Safety and freedom from recoil, pitching, body-sway and spring breakage is arrived at by completing your own spring suspension with

# AMES EQUALIZING SPRING

Motor cars which include shock absorbers in equipment, can cut production costs and better service with Ames.

Motor cars, not shock absorber equipped, can attain riding qualities superior to any other equipment by use of the Ames Equalizing Spring.

Include Ames in your spring specifications. Write today for The Ames Special Manufacturers' Arrangement.

### CLARENCE N. PEACOCK & COMPANY

Exclusive Licensees

Dept. O, 1790 Broadway, New York



## M A Y O R A D I A T O R S



EVENTS have proven that more courage and ability are required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY
New Haven, Connecticut



Also manufacturers of Finestra, Harvey Friction Spring Gear, D. S. P. Drop Forgings, etc.

Digitized by Google

## "American" Axles

## Indicate Superior Quality in Either Gasoline or Electric Pleasure Cars

YOU can safely take for granted the exceptional quality of those motor cars that are equipped with "American" Axles, either of the Bevel or Worm Drive type.

Their presence indicates discriminating judgment both on the part of the maker and the owner of such a car.

The importance of highest quality in a car's rear axle cannot be exaggerated. The vital questions of maintenance of maximum mileage—of durability and safety, are really questions of axle efficiency.

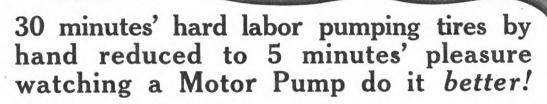
"American" Axles are not found upon cars built and sold wholly on a price basis, because the manufacturing standards of these axles admits only the finest known materials and workmanship of the highest class.

As the distinctive features of these axles are exclusively "American," their efficiency is not duplicated nor even approached by any other axle.

In "American" Axles only can you have the option of the highest class of Bevel or Worm Gears. Both are fitted throughout by us with the best types of foreign made ball-bearings.

The adjusting and full floating features of "American" Axles are fully covered by our own patents and by shop rights from other patentees.

THE AMERICAN BALL-BEARING CO., Cleveland, Ohio



BUT it's more than a question of saving you labor and time, because the matter of always

keeping just the proper amount of air in your tires means saving half y. ur whole tire expense!

A tire that is not properly inflated means—wear of tire through bending of side walls;
—wear of tire through undue strains close to rims, known as rim-cutting;

breaking of fabric through striking stones and sharp objects

-under inflation means increased

"drag" of a flattened tire on the
road—less miles per hour per gallon of gasoline—in other words,
greater running cost per mile;
-increased friction, causing great heat

between inner tube and tread. This removes any patches on inner tube, and burns the life out of the tire; and number inflation means all the de-lays and annoyances arising be-cause of these various troubles; A tire properly inflated reduces the

chance of puncture.

Double air valves, insuring positive operation

Cylinder beautifully machined. Fins mean perfect cooling

Air intake

Piston oiled by oil-soak-ed wick

There's nothing more heart breaking than to have to blow up a tire by hand on the road. And the last few pounds pressure are the hardest of all. Usually you quit 15 or 20 pounds short of the proper pressure and run on under-inflated tires, which costs you money and more trouble

The one thing that affords the greatest insurance against all of these tire troubles and expenses is an efficient Air Pump mounted on your

motor and driven by your motor.

## A Real Stewart Air Pump Complete with air pressure gauge and 13 ft. of hose

#### Stewart One-Cylinder Air Pump

This is mounted right on the motor. Simply throw over the lever and the pump operates instantly. Throw out the lever when tire or air starter is sufficiently blown up. The base of the pump is of aluminum. The piston is steel, hardened, ground and lapped. Connecting rod is hardened steel. Cylinder is a finely machined piece of work, air cooled, with fins which insure perfect cooling. The piston rubs against an oil-soaked wick which supplies every bit of oil it needs, and yet prevents one particle of excess oil from getting into the cylinder. This wick projects outside, where oil is dropped on. The crankshaft is provided with a separate oile. Base of the pump is open, so that should there be any free oil, it will drop entirely out of the pump. The air intake is screened so that no dirt can enter cylinder. There are two air valves as a double precaution against leakage or failure to work. There are no leather or rubber packings to wear and cause leakage. It's capacity is such that it will fill a 36 inch x 4½ inch tire in less than 4 minutes. Price with air pressure gauge and 13 feet of high grade connection nose, complete, only \$15.

#### Stewart 4-Cylinder Air Pump

For those who want a pump with larger capacity we have designed a 4-cylinder model, with real motor bearings, steel pistons, drop forged crankshaft, hardened steel connecting rods, and a most satisfactory oiling system. No rubber or leather piston packings to wear out, but built like an automobile motor. Fins on cylinders assure perfect cooling. Complete, with air pressure gauge and 13 feet of hose, only \$25.

#### Stewart-Warner Speedometer Corporation

Factories: Chicago, Ill. and Beloit, Wis.

Hardened

steel

Branches: Atlanta Boston Buffalo Chicago Cleveland Detroit

Indianapolis Kansas City London Los Angeles Los Angeles Minneapolis New York

Paris Philadelphia Pittsburgh St. Louis San Francisco

AIR PRESSURE GAUGE

And Service Stations in all cities and large towns.

IS FEET OF HOSE

# GRAY & DAVIS Starting-Lighting System

## For FORD Cars

Gray & Davis announce a starting-lighting system for FORD cars. This new system is very compact, and can be installed in a few hours by any garage man or automobile mechanic. It is extremely simple in design and construction and possesses GRAY & DAVIS quality in material and workmanship.

Gray & Davis FORD System Includes the Edison Battery

GRAY & DAVIS Inc.

Boston, Mass.

# GRAY & DAVIS Starting-Lighting System

## FORD Dealers Read This

Every prospective and present owner of a FORD will be interested in this latest Gray & Davis system. We believe there will be a very great demand. It might be well for you to communicate with us. We suggest that you write at once for our proposition to FORD dealers.

Gray & Davis FORD System Can be Installed in a Few Hours

GRAY & DAVIS Inc.

Boston, Mass.



## The Low Priced Car that in Design, Construction and Detail Ranks With Big Expensive Motor Cars

The Car-Nation is a car that any one would be proud to drive. It embodies all the "up to the minute" ideas in both European and American practice, while the price brings it within the reach of the great majority of buyers.

The light weight—great economy in operation—25-30 miles to the gallon of gasoline—ease of handling—low initial and upkeep cost—long life of the tires—speed and hill climbing qualities, make the Car-Nation unsurpassed for general utility.

There is nothing freakish about the whole car—every part is standard—four cylinder block motor—multiple disc clutch—3 speeds forward and reverse—selective type transmission—floating rear axle—wire wheels—left side drive—center control—in fact everything about the whole car has been approved as the best practice.

Dealers throughout the whole country can make a very advantageous agency connection by writing or wiring now.



#### The New "Six-48" Keeton

The Keeton has that distinctive French type of construction that has always made the strongest appeal to people of culture and refinement, both in Europe and America, as the criterion among motor cars.

The mechanical excellence of the Keeton and the completeness of the equipment insure the maximum endurance and comfort in use. Write for "THE TRIPLE TEST" booklet.

MANUFACTURED BY

THE AMERICAN VOITURETTE COMPANY



# THAT MOLINE-KNIGHT TEST

was a two-week, day and night grind—over 11,088,000 Bosch high tension sparks passed across each plug—without a miss or an adjustment of any kind—and pronounced practically perfect by the A. C. A. testing experts.



## To the Dealers in Motor Accessories This Means Much

It means the vivid and conclusive demonstration of Bosch Quality.

It means the maintenance of Bosch Supremacy.

It means even a greater spread of Bosch Fame.

It means big demand and ready sales of Bosch Spark Plugs.

In addition, Bosch Plugs are backed by an advertising campaign of national scope—a campaign broader, more persistent and more far reaching than that for any other spark plug. To the dealer this means quick moving stock—and a high cash value for all stock on hand.

There is a fair margin of profit in the sale of Bosch Plugs, a margin that will repay any dealer for their handling.

CORRESPONDENCE INVITED

BOSCH MAGNETO CO., 224 West 46th St., New York

DETROIT

Over 99 Service Stations in U. S. and Canada

SAN FRANCISCO TORONTO

## Do You Know How An Automobile Is Made?

- Of Course You Don't—unless you happen to be in the automobile-making business yourself; and even then, we doubt if you know how—and how well—Maxwell Motor Cars are made.
- A Visit to the Factory—any one of the mammoth Maxwell factories—would be a revelation to you—even if you are in the business and think you are up-to-date.
- We Have Machines and appliances there for the rapid reproduction of interchangeable parts that are so new other factories haven't gotten them yet. So automatic, so rapid and so accurate, they make it possible for us to put quality in Maxwell cars at a price never possible before.

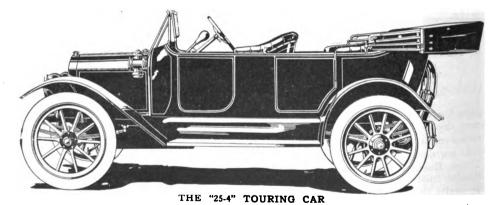
We've Issued a Book entitled "Maxwell Factories and Facilities" and another the title of which is "How To Make Your Car Live Twice As Long."

They're Yours for the Asking—and a perusal of the first named is almost equal to a trip through these splendid plants.

"Does the Term 'Heat-Treatment' Mean Anything to You?"—that's the title of another treatise—forms the second chapter in "How To Make Your Car Live Twice As Long"—and is really the first chapter in your quest for that much-to-be-desired result.

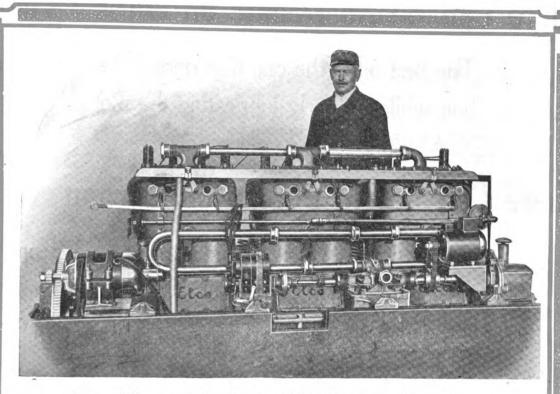
Send for the Books—also the catalog of any Maxwell Model you are interested in

Maxwell "50-6"	-	-	-		-		-	\$1975
Maxwell "35-4"	-		-	-		-		1085
With Electric	Starter	and	Lights		_		-	1225
Maxwell "25-4"	-		•	-		-		750



MAXWELL MOTOR COMPANY, Inc., Detroit, Mich.

Dealers and Service Everywhere



#### The Biggest Engines with Electric Starters and the only Starter that was powerful enough to spin them

This photograph shows one of six 200 horsepower engines recently built by the Electric Launch Company for battleship tenders in the U. S. Navy. The cylinders are 7 inches bore by 6½ inches stroke.

The Rushmore Model A Starter (seen at the left) weighs 62 lbs. and is geared to the flywheel at a ratio of 12 to 1. A 160-ampere hour 12-volt battery is used, being charged by the Rushmore Dynamo at the right.

The spinning speed for a new engine, too stiff to be turned by a hand bar, is

#### 126 r. p. m.

using 350 amperes and developing 4.35 h.p. with a battery to flywheel efficiency of 84½ per cent. When the engine is limbered up and warm, the speed rises to 160 r.p.m., with reduced current consumption.

Rushmore equipment was adopted after other starters had failed to turn the engine at the necessary speed. The nearest other equipment, weighing with 30 to 1 reduction gear more than the Rushmore outfit, turned the engine at 35 r.p.m. with air cocks open, and stalled with air cocks closed.

The Rushmore Starting and Lighting System is factory equipment on the following cars:

Simplex Alco

Knox

Stafford Regal

Lancia Kline

The Rushmore Starting and Lighting System is regular equipment in America on:

Mercedes, DeDion, Isotta Fraschini, Austrian Daimler, Delaunay-Belleville

Any Rushmore Starter can safely be operated on 12 volts, developing twice its rated power

Rushmore Dynamo Works, Plainfield, N. J.

LONDON PARIS BERLIN

#### There Can Be No Debate on Oil

The best oil is the one that deposits the least carbon while properly lubricating the motor.

#### There Can Be No Debate on Carbon

Take two oils of the same thickness. Look at them. The lighter in color has less carbon than the darker in color.

Take two oils of the same thickness and the same color. Pour a few drops of one into the other. The heavier gravity oil will sink because it has more carbon. The lighter gravity oil is better because it has less carbon.

## There Can Be No Debate on INVADER OIL

Pour a few drops of any other automobile cylinder oil of the same thickness and color as **INVADER** into **INVADER** OIL and it will sink because **INVADER** OIL is freer from carbon and is thereby of lighter gravity.

## There Can Be No Debate On Facts

You cannot argue about the weight of a ton of coal ---you can weigh it. You cannot argue about the difference in carbon between **invalue** and all other oils---you can look at them and you can pour them together. That is the answer.

Others may talk in general terms about the "scientific" preparation of their oils. Meanwhile look at INVADER and other oils and pour them together. You will learn which is the best beyond all doubt and if the efficiency and life of your engine means anything to you, cease filling it with befouling carbon and feed it with cleanest, clearest INVADER OIL.



#### INVADER OIL COMPANY, Inc.

Lessees of Charles F. Kellom & Co.

Main Office: 81 Broad St., New York Philadelphia Branch: 113 Arch St.

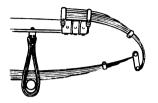
MIDDLE WESTERN DISTRIBUTORS AND BRANCH WAREHOUSES—THE BECKLEY RALSTON COMPANY, CHICAGO, ILL.

	DISTRIBUTORS AND BRANCE WA
New Orleans, La.	Electric Appliance Company
vencier (.2)	III D Noward Bubber ('0.
Trancisco (a)	W B Newayl Bubber Co.
	I ininger Implement Co.
-croir mich	Barran Camphell Co
	I aa Wanduurur Co
Minneapolis, Minn.	Knohlauch Warehouse Co.

Portland, Me	James Bailey Company
New York City	
Boston, Mass	George Collins, 284 Columbus Ave.
Honolulu, T. H	Hoffschlaeger Co., Ltd.

EXPORT SALES AGENTS:

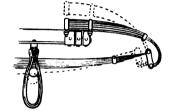
## With and— Without



NORMAL POSITION OF SPRING

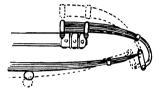
(No strap needed)

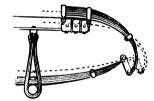




SPRING DEPRESSED

(Still no need of a rebound strap)

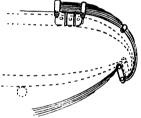




Spring Held Within Safe

**REBOUND** 

Safety or Danger Choose



Spring Forced Way Beyond the Safety Limits

Until the rebound comes there is no need of rebound straps—the spring can and does take care of itself. No easy riding spring can withstand a hard rebound unassisted—that is the work of the rebound strap.

And because of their superior quality and strength you should insist upon

## Gilmer Rebound Straps

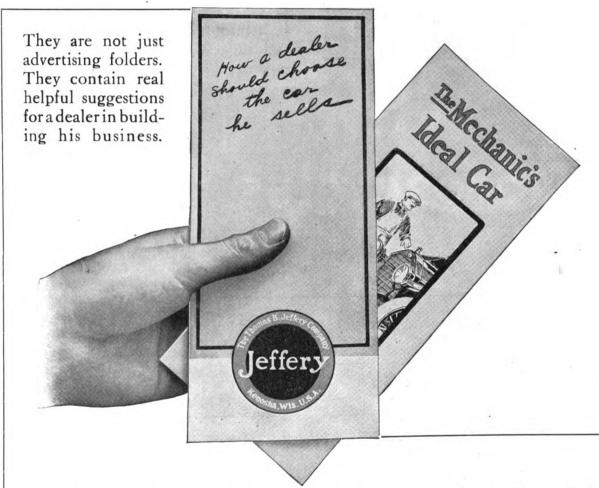
Many of the better cars have them as standard equipment. None should be without them.

L. H. Gilmer Co.

52 North Seventh Street

Philadelphia, Pa

# These two new books mean money to Automobile Dealers



## Don't contract to sell any car unless it will be a credit to your name

A great many dealers wish today that they had been more particular about the company as well as the car they represented last year.

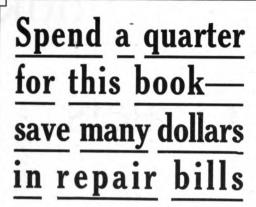
Jeffery dealers know what's back of the Jeffery car. Get these books. They will help you decide on a policy for your own business.

The Thomas B. Jeffery Company Main Office and Works, Kenosha, Wisconsin

THE THOMAS B. JEFFERY COMPANY

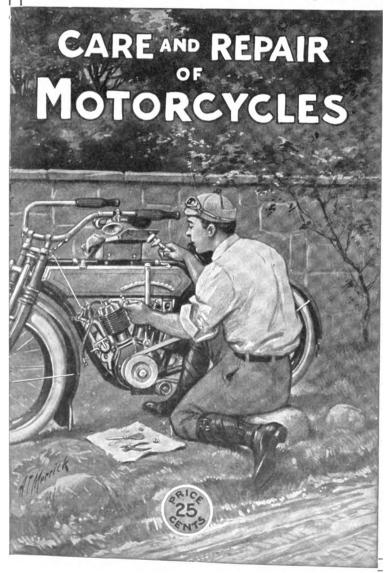
Dept. A, Kenosha, Wis.

I want the two new books about the Jeffery cars.



It is the friend be on the jo of troubl not be a m to unders

It is brim fu and suggest type of mote



## Silent 11

## Ippard Stewart

#### **Powerful**

# Worm and Gear— the Economical Drive

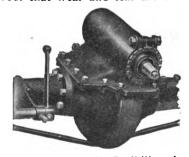


HE smoothness and quietness, the apparent gliding over the road without effort, with which Lippard-Stewart trucks go about their work, are in direct contrast to that grinding, rattling, jerky motion of some motor trucks. The truck that goes clattering by your door is not an economical truck. The noise and unsteady operation is wear getting in its work, and wear means waste. Elimination of this waste is vital—but how? There is a way—the Lippard-Stewart is the solution.

#### **What Worm Drive Does**

The silence of Lippard-Stewarts is an indication of the care taken in their building throughout. But in the drive system, which has the hardest work to do, lies the best proof that wear and tear are cut

down to the last notch. Through the Lippard-Stewart worm drive, power is applied with such steadiness that shocks disappear. The natural result is that breakages are uncommon, adjustments are



unnecessary, strains are lessened, flexibility is secured, the truck does not tear itself apart.

#### Getting the Most for the Money

When you stop to think that sprockets and chains deliver to the rear wheels only about 85% of the motor power, and that the best obtained from other types of drive is on an average 90%, it is plain that the 97% efficiency of the worm and gear makes every turn of the motor count for all that can be got out of it. The 7% to 12% of power saved means that much less gasoline to run the truck, an economy that holds good throughout the life of the truck.

#### Quality from End to End

Lippard-Stewart trucks with worm drive exemplify up-to-dateness. Complicated jack shaft and chains, and bulky double reduction axles have become back numbers. Of Timken-David Brown manufacture, the Lippard-Stewart rear axle gives results that line up with the experienced user's ideas of profitable truck operation. From end to end the same endurance, ample ability and high quality are built into Lippard-Stewart trucks—facts proved by specifications. Write for them.

Lippard-Stewart trucks are furnished in two

Lippard-Stewart trucks are furnished in two capacities—1½ ton chassis worm drive, \$2300; 1500 lb. chassis, hevel drive (pneumatic tires), \$1650, worm drive (solid tires). \$100 extra. Bodies for various purposes.

**Dealers** Business men are buying Lippard-Stewart trucks because they can better their trade conditions and save money. Consider the possible one-car sales, quantity lots to a single firm, repeat orders, all-theyear-round buying interest, and the strictly dollars and cents basis for business development. The possibilities are great—grasp the chance.

LIPPARD-STEWART MOTOR CAR CO., 1734 Elmwood Ave., Buffalo, N. Y.

## **Enduring Quality Proven**

The persistent, constant and strenuous stresses of race track speed prove the superiority of New Departure Ball

Beatings.

Thirty-nine winnings, twenty-six seconds and eleven thirds, over a total of twenty-eight other motor cars, including foreign racing models, is the story of the New Departure equipped Mason Car the past season.

The American-made New Departure is guaranteed. Literature on request. Special Cyclecar data will be sent

if you are interested.

#### The New Departure Manufacturing Company

Bristol, Connecticut

Western Branch: 1016-17 Ford Building, Detroit, Michigan



#### Why This Truck Succeeds

THE Twentieth Century trend is toward mechanical power. The horse has not the endurance, power, or compact efficiency of the truck. He tires in a few hours; for his great bulk his power is trifling; and he eats up profit in feed, attention, and delays, all year round whether he works or not. No wonder each year sees many hundreds of motor trucks displacing horses. And

#### International Motor Truck

displaces more than does any other commercial car (it is made at the largest motor truck factory in the world), because it has almost a limitless field. The International Motor Truck is thoroughly high-grade, is built up to business man.

Is there a more profitable thing for you to sell than a truck that meets exactly the needs of the great commercial public? Get the agency for the International Motor Truck. Investigate the possibilities in the truck. Read the catalogues, literature, selling helps. They mean—Sales!

Write for literature, terms, and territory

### International Harvester Company of America

155 Harvester Building

Chicago USA

## ZENITH<sub>0</sub>

#### "Gives Standard Carburetion"

SIX years on the European market—and two years on the American market—without a change. WHY?

To have a record like this and show a constant growth in sales a carburetor must embody some vitally important principle—
that uniformly makes good.

Car manufacturers and dealers are invited to familiarize themselves with the reasons why.

Write and we will tell you

#### **TENTH** CARBURETOR CO., Detroit, Mich.

ACENTS.

Mercedes Repair Company, 159-161 East 54th Street, New York Motor Parts Co., No. 185 Columbus Avenue, Boston, Mass. Motor Parts Co., No. 818 North Broad Street, Philadelphia, Pa. Fawkes Auto Company, Minneapolis, Minn.

Fawkes Auto Company, Minneapolis, Minn.
René J. Marx Company, No. 1062 Geary Avenue, San Francisco





Model T Runabout - - \$50

Model T Touring Car - 550

Model T Town Car - - 750

With Full Equipment f. o. b. Detroit

Ford Motor Company
Detroit, Michigan

## 75% of all tire trouble is due to under inflation

THERE is no method yet discovered of ascertaining the pressure in the inside of a tire, except by the use of a pressure gauge. A casing containing 40 pounds of air looks and feels exactly like a casing containing 80 pounds. If your tires require 80 pounds and you only give them 40, they're on the quick road to the scrap-heap.

HEF A

#### **SCHRADER**

Universal Tire Pressure Gauge

and Save Your Tires

Price, \$1.00

For Sale by

A. SCHRADER'S SON, Inc.

783-791 Atlantic Ave., Brooklyn, N. Y.

W

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T

#### Ignition Service

It Doesn't Matter what brand of ignition your automobile is equipped with-SPLITDORF SER-VICE is AT YOUR COMMAND. The whole SPLITDORF organization is YOUR FRIEND -we want EVERY user of a hydro-carbon engine to be OUR FRIEND. We'll leave no stone unturned to bind the friendship with TRUE SERVICE.

Call upon our nearest Branch Manager if you have ignition troubles-he'll advise and help you without delay. He's there for the purposeyou can depend upon him treating you right.

#### SPLITDORF ELECTRICAL COMPANY

ATLANTA, 10-12 E. Harris St. BOSTON, 180-182 Mass. Ave. CHICAGO, 64-72 E. 14th St. DETROIT, 972 Woodward Ave. KANSAS CITY, 1823 Grand Ave. SEATTLE, 1628 Broadway. LOS ANGELES, 1226 S. Olive St. LONDON, BUENOS AIRES. NEWARK, 290 Halsey St.



#### The Motokart Is Not A Cyclecar

in the generally accepted meaning, it is NOT a miniature plea car converted to commercial usage. It WAS the first smaller standard four wheel parcel delivery wagon built in the Unstates. It Is STILL the only car of its type built exclusively commercial purposes. A chassis ideal for pleasure usage can in successfully be made the basis for a delivery car, the different requirements is too radical. We know nothing about pleasure cars, but have devoted ourselves exclusively to the purpose of ducing the best possible parcel delivery car at a price within e storekeeper's reach—\$400.00. Let us tell you how well we succeeded.

#### Tarrytown Motor Car Co., Inc.

General Offices: Factory: 1790 Broadway, New York City Tarrytown, N. Y.

Agents wanted in all unoccupied territory



#### The Shows Swamped Us

We were totally unprepared for the enormous amount of business which we received at the shows and have had no time this week to prepare our Advertisement. We will have something interesting to say to dealers later on.

#### SHARRER PATENT TOP CO., Inc.

245 West 55th Street, New York City Telephone, 6590 Columbus



We make valves exclusively. Lewis Valves are used by the largest and most successful builders of gasolene motors. High grade workmanship and prompt deliveries are the cause of this leadership. To get quick action, send blue-prints for prices.

Lewis Electric Welding & Mfg. Co. TOLEDO, OHIO



Copy contributed by Russel M. Seeds Advertising Agency, Indianapolis.

#### **Better and Cheaper Living** Will Come to All Through the Lincoln Highway.

The isolation of the farm means these things:

1.—Congestion and pauperism in the cities because people desert the farms and overcrowd the towns.

2.—High cost of living, because owners of farms find it hard to get help and costly to get their products to market.

3.—Less purchasing power among the people and less prosperity for merchants and manufacturers.

This isolation is due to one cause—Bad Roads.

Good roads mean more to every American, whether he lives in town or country, than any other reform.

The greatest object lesson in good roads all over America will be

#### The Lincoln Highway

It will be built by the voluntary contributions of the people. Will YOU give \$5 to see it through. Just address

The Lincoln Highway Association Detroit, Michigan



HE circulation of the Motor World is a guaranteed one, sworn to by an affidavit, which will be sent in detail to any one upon request





DETROIT OFFICE:

#### **SEND \$10.00**

#### -for the Empire Gasoline Economizer We'll Send It Back

if at any time it does not give you entire satisfaction. The Empire Gasoline Economizer is an instrument attached to your intake manifold. It is the "watchdog" of the carburetor; the sentinel of the gasoline supply. It will save from 20% to 80% of your gasoline bill; keeps carbon out of the cylinder, and prevents overheating of the motor.

Dealers everywhere are making money selling Empire Economizers. Write today for full agency proposition.

#### THE BROWN-TAYLOR-GREENE CO.

1323-25 South Michigan Avenue

Chicago

More Power \$2400 More Flexibility More Economy More Silence Four-cylinder, Wagner e lectric five-passenger. starting and lighting, \$2400. 50 horsepower 128-in. wheelbase.

SHELDON

**AXLES AND SPRINGS** ARE INVINCIBLE

THE SHELDON AXLE COMPANY

CHICAGO OFFICE:

68 Bast 12th Street

WILKES-BARRE, PA.

Why should the auto business be different from any other business? To my mind it is not, and the sooner it gets down to a horsesense basis the healthier it will be. The day when it was a "game" is gone. The red fire and hurrah period is past. And the companies which stay in are the ones which are going to adopt a hard-headed, closemargined, business-like policy.

Ow andle

President of THE LEXINGTON-HOWARD CO. Manufacturers of Lexington "Four," \$1335, and the Howard "Six," \$2375, Connersville, Indiana.

Send Us Your Inquirles When In the Market for

#### SHEET METAL STAMPINGS

**Estimates Cheerfully Furnished** 

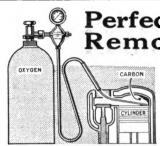
THE BOSSERT COMPANY Utica, N. Y.











Perfect Carbon Remover \$10

Will remove ALL carbon from cylinders. Easily and in few minutes. Equal of any high-priced outfit. All parts guar-anteed. Keeps up efficiency of cars and trucks. BIG MONEY MAKER for garages.

#### Price \$10 (Without Oxygen Tank)

Usual price \$15. As we sell for cash only and no accounts carried, customers are given take no chances. Sent prepaid—cash with order or C. O. D.

OXYGEN DECARBONIZER COMPANY, 301 RIVER ST TROY, N. Y.

Send for Information



#### THE APPLE ELECTRIC COMPANY

64 Canal St., Dayton, Ohio America's Leadler Manufacturers of

#### Electrical Equipment

Electric Lighting and Starting Systems for Automobiles.

Electric Lighting and Starting Systems for Motor

Boats.

Electric Lighting and Starting Systems for Motor Trucks and Tractors.

Electric House Lighting Outfits.

Golden Glow Headlights.
The Famous Apelco Storage Batteries.

Write for Bulletine

THE APPLE ELECTRIC COMPANY, 64 Canal St., Dayton, Obio





For Ford, Hupp, Reo, Buick and various other models

If you are handling a car not mentioned

here, let us hear from you.

Will mail price list and samples at your

request.

Fit just like they were made on your car, first-class in every respect, in fact they are unexcelled by any. For your benefits as well as ours let us suggest you drop us a line concerning our agents' proposition — it's good.

CENTRAL AUTO TOP CO.
Manufacturers of Auto Tops, Seat Covers, Trimmings, etc. 330 N. Illinois St. INDIANAPOLIS, IND.











#### The Standardized Car

The car that started the stampede to standardization



A Cole franchise is a valuable asset to any dealer. Find out about it.

Car Co. of Indianapolis Cole Motor



NORDYKE & MARMON CO. INDIANAPOLIS (ESTABLISHED 1851) INDIANA





A big, strong, powerful car, having all those re-finements and up-to-date features that make the Cartercar a continual source of pride and satisfac-

The Cartercar Gearless Transmission insures the utmost ease in handling with no jerking or jarring clutch and clashing or stripping of gears.

Built in various body types \$1250—\$1700—\$2000

CARTERCAR COMPANY, Pontiac, Michigan



Completely Equipped

New Series Model 31, 110 Inch Wheel Base

A larger, more beautiful car, with every luxury and equipment. Increased production brings the price down to \$900.

Advance catalogue with complete details is ready

But a copy of the Mustrated story of the Transcentic etal Empire. Forty pic EMPIRE AUTOMOBILE COMPANY, Indianapolis, U.S. A

#### KNOX AUTOMOBILE COMPANY SPRINGFIELD. MASS.

Plant including equipment, machinery, supplies and merchandise, are to be sold under a decree of the U.S. District Court. This large plant, fully equipped, and having superior railway facilities, is now in active operation and has built up a large business in Fire Apparatus. Tractors and other lines.

Full particulars may be obtained by addressing C. G. Gardner, Trustee, Knox Automobile Company, Springfield, Mass. Meanwhile we are prepared to supply a large variety of pleasure cars, fire apparatus and tractors to those desiring the highest quality.







Lead the world in quantity of production. Twelve mammoth factory buildings required to supply the demand.

SERVICE STATIONS 756 Woodward Ave., Detroit, Mich 1120 Michigan Ave., Chicago, Ill.

Hyatt Roller Bearing Company Detroit, Michigan

#### LEWKOWICZ CONVERTIBLE AUTOMOBILE BODIES

#### ONE MINUTE'S TIME

STYLISH TOURING CAR COMFORTABLE CLOSED CAR

Manufactured by

#### **CONVERTIBLE AUTOMOBILE BODY CORPORATION**

OFFICE AND FACTORY:

1885 Park Avenue, Oorner 128th Street Telephone Numbers, Hariem 3478 and 4390

#### Combination Welding Cox and Decarbonizer Outfit

Save time, money and make extra profit doing your own welding. Outfit complete and simple; repairs worn and broken parts good as new. Welds iron, steel, brass, bronze and aluminum. Safe and sure. Quick repair work. Includes oxygen carbon remover feature. Double work, double profits. Pays for itself in short time. Complete instructions furnished.



Write for Catalog -- NOW



COX BRASS MFG. CO., Albany, N. Y.

NEW YORK CITY 1777 Broadway CHICAGO, ILL. DETROIT, MICH. 3445 Michigan Ave. 870 Woodward Ave. SAN FRANCISCO, CAL 1216 Van Ness Ave.





## Tripiex Engine Starter For Ford Cars

Mechanical, durable, simple and efficient. 100 per cent. uninterrupted service from the time it is attached.

Write for particulars regarding dealer arrangements.

UNIVERSAL MANUFACTURING CO. RACINE, WIS.



## Quick Detachable and Demountable Rims

Our new and improved manufacturing facilities insure quality products and prompt deliveries in large or small quantities.

Jackson Rim Company Jackson, Mich.



## Any Kind Every Kind Stock, or to Blue Print Ring Clincher Q. D. Demountable Channels

For Automobiles, Motor Trucks, Aeroplanes, Motorcycles, Bicycles.

We Also Make Axles and Hubs.

MOTT WHEEL WORKS, Utica, N. Y. R. B. ABBOTT SALES CO., Sales Agents, Detroit



This name on Automobile Tires and Rubber Accessories signifies inherent qualities of material and workmanship that insure the maximum of service at the minimum of expense.

THE GOODYEAR TIRE & RUBBER CO.
AKRON, OHIO

(673)





Write to LONG MANUFACTURING COMPANY, Detroit, U. S. A.



#### Prest-O-Lite

is the most RELIABLE Lighting System

All the facts on all lighting systems mailed you on request.

The Prest-O-Lite Co., Inc., INDIANAPOLIS, IND.



Rubber has a way of rebounding. If it's good rubber, it rebounds to the credit of the maker. If it's poor rubber it rebounds—the other way. We hear a lot about the rubber in our tires and tubes. It's worth mentioning.

#### Kelly-Springfield Tire Company

Corner Broadway and 57th Street, N. Y.

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detroit, Cincinnati, San Francisco, Los Angeles, Cleveland, Baltimore, Seattle, Atlanta, Akron, O.

The Hearn Tire & Rubber Co., Columbus, O. Boss Rubber Co., Denver, Colo.

Boss Rubber Co., Denver, Colo. Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La. Central Rubber & Supply Co., Indianapolis, Ind.

Indianapolis, Ind.
The Olmsted Company, Inc.,
Syracuse, N. Y.

Bering Tire & Rubber Co., Houston, Texas. Todd Rubber Co., New Haven, Conn.

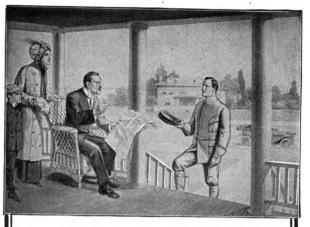
ven, Conn.

Atkinson Tire & Supply Co.,
Jacksonville, Fla.

C. D. Franke & Co., Charleston, S. C.

K. & S. Auto Tire Company, Limited, Toronto, Can.

Barnard & Michael, Buffalo, N. Y.



## Get Weed Tire Chains at Once!

"I know you are a careful driver, but it is best to adopt every device to prevent accidents.

"I can't afford to take any chances. We have all foolishly depended on rubber alone long enough. It's time to awake to our responsibility. So go at once and buy a complete equipment of Weed Chains and never start out without them when the roads or pavements are slippery or greasy."

#### Weed Anti-Skid Chains

Insure Against Anxious Moments



Probably no other device has done so much to raise the factor of automobile safety as WEED CHAINS. They are the proverbial "ounce of prevention" against skidding, the cause of over ninety per cent of all automobile accidents—Life Insurance and Accident Insurance Companies strongly endorse them and recommend their use. Taxical Companies, for their

own protection, *insist* that their drivers put them on when the streets are wet or slippery.

#### **Increasing Demand**

for WEED CHAINS makes them the **most profitable** Automobile Accessory handled by Dealers—Quick and Steady Sales—No Dull Seasons—No Dead Stock—Easily Handled—Liberal Profits—Universal Satisfaction.

Attractive, convincing, decorative, lithographed hangers supplied to dealers upon request.

At all dealers selling Auto Supplies

Weed Chain Tire Grip Company
38 Moore Street, New York, N. Y.

Manufactured for Canada by Dominion Chain Company, Limited; Main Office, Suite 801 Shaughnessy Bidg., Montreal, Canada



## or Sale-Wants

TO LET-The repair department in a first-class garage, machinery included, having the agency for Ford, Overland and Cutting cars. An up-to-date garage, a large repair business and great opportunity for the right man. BATH GARAGE COMPANY, Bath, Maine.

FORD Commercial and Racing Bodies. Salesmen's sample carrying outfits. Linoleum covered running boards. Special bodies built to meet your requirements. Write. THE AUTO REMODELING CO., 1503 Michigan Ave., Chicago, Ill.

FOR SALE—A limited number of Gemmer Steering Gears, \$7.00 each. E. S. YOUSE CO., 46 North Fifth St., Reading, Pa.

SPECIAL—Moon 5-passenger touring car, electric started, lighted, 1913 model, 39 H.P., carefully used 3 months as demonstrator. Just as good as new, in style, and will please. Bargain, \$1.150. Going out of business. VICTOR AUTO SUPPLY CO., Waterman, Ill.

PEERLESS AUTO BODY POLISH.

A brightener and restorer of life to all old varnished surfaces. Especially adapted for automobile bodies where the life of the varnish is worn out. THE COLUMBUS VARNISH CO., Columbus,

NEW JERSEY Auto Registrations. Send for sample page and get list from reliable party right in Trenton. Daily service only \$100 for entire year 1914. H. J. TINDALL, 47 W. State St., Trenton, N. J.

15 cents per line of six words, cash with order. - In capitals, 25 cents per line -

A market place where Dealers, Jobbers and Manufacturers may buy, sell or trade used cars, parts and appliances and where help or situations may be secured at a nominal cost.

GET List of Automobile Registrations direct from State House. Quickest and best daily service. \$45.00 for entire year, or at rate of \$4.00 per month. Spe-cial lists of all kinds promptly compiled. PETER DONNELLY, Box 180, Albany,

WELDING Plant, Cutting Plant, Carbon Removing Outfit, or a combination of all of these at from \$15.00 to \$175.00 for high or low pressure system. For full particulars address BERMO WELDING APPARATUS CO., Omaha,

PEERLESS JET BLACK FENDER JAPAN.

A heavy bodied, high gloss finish enamel. Covers solid with one coat. Air dries in thirty-six hours. THE COLUMBUS VARNISH CO., Columbus, Ohio.

ROKEN CRANKSHAFTS, cylinders, ROKEN CRANKSHAFTS, cylinders, crankcases, flywheels, gear teeth, pistons, perfectly welded and machined ready to replace. Guaranteed and references. Machinery up to 5 tons welded. ATLAS WELDING WORKS, 74-76-78 Irving St., Rahway, N. J.

MAILING LISTS AND STATISTICS. Owners or dealers; any state, county or city; weekly and monthly supplements at lowest prices. Special lists of Electrics, Trucks, Fords, Studebakers, Over-

lands, etc.
MOTOR LIST CO. OF AMERICA,
230 News Arcade, Des Moines, Iowa.

ARE YOU in need of any additional help in any department of your business? Are you out of employment or looking for a better connection? Have you second-hand apparatus of any kind or do you want to buy second-hand material? Have you a factory site for sale or do you want to buy one? If so, use the Want and For Sale column of the Motor World. Six words to the line, fiften cents a line. Advertisements can be inserted over a number when it is desired serted over a number when it is desired and identity of the advertiser will be kept confidential.

PEERLESS EXTRA FINE BLACK
JAPAN.

Air drying with a high gloss finish on
all metal parts of automobiles. One coat
covers solid requiring no primer or undercoat. THE COLUMBUS VARNISH
CO., Columbus, Ohio.

A UTOMOBILE Cylinders reground, new pistons and rings fitted. Garage air compressors. CAST IRON BRAZING CO., Manchester, N. H.

RACING BODIES—We make them to fit any car. Seats, special and stock sizes; Radiators, Hoods, Tanks and Fen-ders. AUTO SHEET METAL WKS, 1530 S. Michigan Ave., Chicago, Ill.

FORD Racing Type Bodies, we build them in several models. Also Hoods, Seats. Tanks and Fenders. AUTO SHEET METAL WORKS, 1530 S. Michigan Ave., Chicago, Ill.

PEERLESS LAMP ENAMEL.
Dries in twelve hours with a high
gloss finish on lamps, etc. One coat
covers solid. If dull drying enamel is desired please specify. THE COLUMBUS
VARNISH CO., Columbus, Ohio.

These columns offer you an opportunity to appeal to an audience of 8,000 readers whose merchandising taste is being cultivated weekly to the highest degree by our articles on "Wide Awake Merchandising."

## Fiss, Doerr & Carroll Horse Company

East 24th St., Lexington to Third Ave. Largest Dealers in Horses in the World

WILL CONDUCT AN

#### **AUTOMOBILE AUCTION**

Every Thursday, at 3 o'clock P. M.

In Sales Arenas, 139-151 East 24th St.

Cars of both the pleasure and business types will be accepted the day prior to sale for exhibition in the NEW, WELL LIGHTED, SPECIALLY DESIGNED ARENA adjoining regular sales ring and will be offered for disposal on the day designated

To the Highest Bidders, Without Reserve

A UNIFORM RATE OF

#### 5 PER CENT COMMISSION

Will be charged on all sales of \$100 and over and a minimum fee of \$5 on each car selling for less than \$100.

An Unusual Opportunity to Buy or Sell

EITHER A USED OR NEW CAR FOR ANY PURPOSE.

#### CONSIGNMENTS SOLICITED

WRITE FOR FURTHER PARTICULARS TO FREDERICK WAGNER, President. Main Office, 155 E. 24th St. Telephone, Madison Square 3100.

## Woodworth Freads

will help you increase your business while benefitting your customers. We will send any responsible dealer a pair on 30 days' trial. Write new. Good Agents wanted for unoccupied territory.

LEATHER TIRE GOODS CO., Niagara Fails, N. Y.

#### **Every Stutz Car**

is exceedingly easy-riding and comfortable. The straight line low alung body, deep upholstery and luxurious appointments of the Sturdy STUTZ give it that aristocratic design which lends dignity and quality to a high class motor car. Write today for advance booklet A-15 Sturdy STUTZ Announcement.

STUTZ MOTOR CAR COMPANY, Indianapolis, Ind.

## DIXON'S No. 677 GRAPHITE GREASE For Transmissions And Differentials

Send for "Lubricating The Motor" No. 23

Joseph Dixon Crucible Co., JERSEY CITY NEW JERSEY

#### MOTOR WORLD

"The Paper That Is Read, Not Merely Looked At"

It ought to be a regular weekly visitor in your office, Mr. Dealer. \$2.00 per year—a small price for a big value. Subscribe today.

Motor World Publishing Co., 1600 Broadway, New York

#### **AMERICAN KUSHION KORE**

A tire filler 10 to 20 per cent. lighter than any other tire filler. A big proposition for dealers who are on the alert for more and better business. Write for details.

AMERICAN KUSHION KORE TIRE CO. Buffalo, New York

For anything in sheet metal that goes onto an automobile ask the

#### HAYES MANUFACTURING COMPANY

**DETROIT, MICHIGAN** 

Largest Users of Sheet Metal in the World

#### Schafer Ball Bearings

Famous For Their Durability

BARTHEL & DALY, 42 Broadway, New York

TO-DAY

#### United States "Nobby" Tread Tires

Stand Alone - In a Class by Themselves

United States Tire Company, New York



Specialists Spring Suspension High Grade Only

CLEVELAND, OHIO



#### METZ "22" ROADSTER \$475

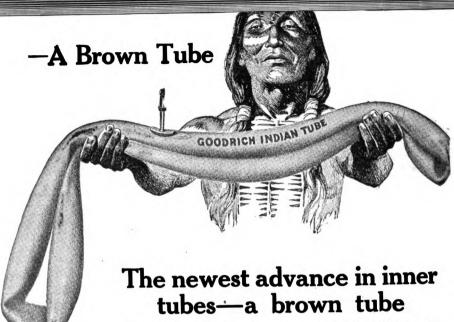
The "gearless car"—no clutch to slip, no gears to strip—completely equipped, fully guaranteed. 4-cylinder, 22½ H.P. water-cooled motor. Bosch magneto, artillery wheels, best quality clincher tires. Makes 5 to 50 miles per hour, 28 to 32 miles on 1 gallon of gasoline. Great hill climber. You can secure EXCLUSIVE SALE in your territory. Write for Book "B."

METZ COMPANY, Waltham, Mass., U. S. A.

#### **HESS AXLES**

Now standard on fourteen makes of America's leading cars and still growing. Send for blue-prints and specifications—or consult our engineering department.

HESS SPRING AND AXLE COMPANY CARTHAGE, OHIO



Every tire dealer, garage man, chauffeur and motorist in the country should fix this standard in his mind—a brown tube.

Goodrich Tires give the motorist everything science and skill can produce in quality of construction and quality of service.

Now Goodrich, as usual, takes the next step in advance, and improves the *whole* tire service with what every judge of rubber and every judge of construction will say is the last word in inner tubes. We call it the

## Goodrich Indian Tube

We give it this name because it is made of the cream of the finest rubber gathered by the native Indians in the richest rubber country.

It is hardy, enduring, full of vitality—like an Indian.

It is built for speed—like an Indian.

It is brown-like an Indian.

It is the pure breed-like an Indian.

It is "best in the long run"—like an Indian. You'll always know it by its color—copperbrown, Indian-brown.

The Goodrich Indian Tube will never be judged by the price, nor bought solely

because of the price. Like all Goodrich products it will stand on its perfect quality and its dependable delivery of full service.

The man who buys it will take the Goodrich word for it that his money never before bought such an inner tube as this brown tube, the "Indian."

For the dealer it will make that greatest of all business friends—the more-than-satisfied customer.



#### The B. F. Goodrich Company

Factories: Akron, Ohio Branches in All Principal Cities

There is nothing in Goodrich Advertising that isn't in Goodrich Goods





That is what the "buzzer" or "vibrator" horn is coming to be called in the trade. There is a simple reason for this.

IT IS IMPOSSIBLE to make a "buzzer" horn that will stand up at the price for which it is sold.

An electric buzzer cannot be made so that it will give a powerful danger-expressing note. Its low-pitched nasal buzz has little carrying power—and less warning power.

Buyers will pay only a small price for such a signal. It must, therefore, be made CHEAPLY, to sell CHEAPLY.

The diaphragm of a "buzzer" horn is vibrated by the tapping or buzzing of a leaf spring against a rod fastened to the diaphragm. Each tap of the spring means a hot electric spark between two points.

If these points are not made of platinum iridium they soon wear down and burn out. Then the horn won't work. It is impossible to use platinum in "buzzer" horns. Its cost is prohibitive.

We know. We put in many months at experiments and tests. We own the patent for the best "buzzer" horn we ever saw. We found that it would not stand up for any length of time unless we used materials that would make it cost more than we could get for it. So we never put it on the market.

The great majority of "buzzer" horns are sold today to the manufacturers of the cheaper cars. They are referred to merely as "ELECTRIC HORNS" never by name.

Buyers demand an electrically operated signal. These makers equip with an electric "buzzer" because it is the cheapest electric signal they can buy. It costs them from \$1.10 to \$2.00—even less than a bulbhorn.

EVERY KLAXON bears a PERMANENT guarantee. There is nothing in a Klaxon that CAN wear out. It is NOT an "electric horn." It is totally different. It is a noise machine which produces big, clean-cut sound waves of great carrying power, by the mechanical action of a cam wheel against a diaphragm. The wheel is driven by an electric motor, or in the Hand Klaxon, by a series of multiplying gears set in motion by a push-rod. This principle is EXCLUSIVELY Klaxon. The Klaxon patents have been fully sustained by the Courts.

69 different makes of cars are Klaxon-ized—including every high-priced car and most of the best moderate priced cars. The makers of these cars pay many dollars more rather than equip with a cheap signal that is bound to make dissatisfied customers:

A. E. C. Alco Armleder Benz **Borland Electric Broc Electric** Buffalo Electric Roadster Century Electric Charon (European)

Chicago Electric Columbia Crown Croxton Davis Dayton F. l. A. T. Jeffery Keeton King KisselKar "Six" Knickerbocker Knor Lancia (European) Lenox Locomobile Lozier Luverne Marmon

Mercedes Mercer Metallurgique Mors (European) Multiplex National Nyberg Oakland Ohio "Six" Old Reliable Oldsmobile Oxford (Canadian) Packard Peerless Peugeot Pierce-Arrow Pope-Hartford"Six" Pratt

Matheson Maxwell "Six"

Sayers & Scovill S. & M. "Six" Schacht Schneider (European) S. G. V. Simplex Stafford Standard "Six" Staver Stearns Steveman Sternberg Stevens-Duryea Stoddard-Dayton Touraine Triumph Walker Electric Ward White Winton



Lovell-McConnell Mfg Company Newark, N.J., U.S.A.

"The Public Safety Signal



KLAXON

KLAXONET This advertisement planned, written and set up catirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type expanding designed by Goudy.

## Attention of Dealers

rights of the American Electric Car Company will be placed in a position of absolute supremacy in the electric vehicle market of their territory. They will have

A CAR TO FIT ANY POSSIBLE-BUYER'S PURSE A CAR TO SATISFY EVERY DESIRE A CAR TO MEET EVERY NEED

In fact, every whim of the most particular buyer can be satisfied with one of these cars—body-design, upholstery, style of drive, type of control, battery-size, and price.

A first glance of any of the models will convince the experienced buyer that the prices are based on actual values, and that the values are above comparison.

With this line of magnificent cars at his command the electric car dealer has opportunities unprecedented in the annals of electric vehicles. And he will be able to dominate the market in his territory.

Send your request for dealer-proposition immediately to the Cleveland Sales Office, Payne and Fortieth Streets.

### The American Electric Car Co.

Pleasure Car Sales Office
Commercial Car Sales Office
Payne and Fort
Sagi

Payne and Fortieth, Cleveland Saginaw, Michigan

**CLEVELAND** 

FACTORIES CHICAGO SAGINAW



Trade Paper Giving the World's Motor New

ol. XXXVIII No. 9

New York, February 19, 1914

Ten cents a cop

## IN COLD WEATHER!

Just what will the starter on your car do, when the mercury sticks around zero?

It's not an easy job to turn a stiff, cold engine. This requires power, power, POWER,—and then some

Cold weather starting is the final test. Severe conditions develop starting efficiency or prove inefficiency—depending upon the system.

Just remember that the-

## GRAY & DAYIS STARTING-LIGHTING SYSTEM

Knows no weather conditions. It cranks any engine, regardless of size, make, or horsepower with equal facility—summer or winter!

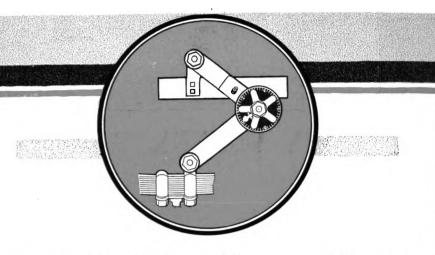
And that's the kind of system you want on your car.

GRAY & DAVIS, Inc.

Boston, Mass.

blished Weekly by the Motor World Publishing Company, 1600 Broadway, New Yor

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#### Rough Riding Upsets Your Best Selling Talk

F what avail are all the salesman's arguments if his car does not measure up to the customer's ideal of comfort on the road? Comfort is essential to conclude the sale and true comfort is best made certain by the

## Truffault-Hartford

#### SHOCK ABSORBER

"The Pioneer and the Best"

Long recognized by motorists as an essential part of every car's equipment and today the only shock absorber included as standard equipment on leading cars.

Controls all excessive spring oscillations arising from road surface inequalities, insures maximum possible steadiness and comfort to the occupants, protects

the machinery from destructive strains and greatly reduces the wear on tires.

Are they fitted on the car you sell? Customers expect them and dealers are justified in demanding this consideration from the manufacturer.

Four models ranging in price from \$16 to \$60 per set of four.

#### HARTFORD SUSPENSION CO.

E. V. HARTFORD, Pres. Office and Works: 142 Bay St., Jersey City, N. J. Manufacturers of Hartford Electric Starting and Lighting System

New York—1700 Broachway, New York—1200 Broachway, New York—1202-211 West 8th St. Boston—319-225 Columbus Ave. Chicago—1485 Michigan Ave. Philadelphia—1437 Vine St. Jersey City—111-143 Morgan St. Kanuas City—1803 Grand Ave. Detroit—830 Woodward Ave. Indianapolis—425 No. Capitol Bird. Chanslor & Lyon
San Francisco
Syntage
Spotland
Seattle
Syntage

Victoria
Coughlin & Davis, Cincinnati, O.
Dyke Motor Supply Co., Pittsburgh, Pa.
Pennsylvania Rubber & Supply Co., Cieveland, O.
Burnett & Chandler, 311 Halsey St., Newark, N. J.

## STROMBERG MOTOR DEVICES COMPANY PATENTS UPHELD!

United States Court declares Zenith carburetor to be an infringement. We have been sustained by the United States District Court in our claim that we have the <u>EXCLUSIVE</u> right to manufacture the type of carburetor which has come to be known as the atmospheric well device.

Our United States patents to Ahara, dated October 15, 1901, and to Richard, dated June 6, 1905, under which we have been and are now manufacturing, broadly protect the fundamental principles of the Atmospheric Well Carburetor.

The Zenith Carburetor Company of Detroit, Michigan, declined to recognize our rights. We brought suit in the United States District Court at Chicago, and on February 13, 1914, the court decided the case in our favor. Upholding the validity of the patents and finding that the Zenith Carburetor infringed.

## Stromberg Motor Devices Company

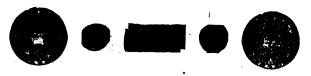
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CHICAGO, ILL.



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#### Good Cable **Essential**

In the early days, when only an ignition system existed, and particularly when automobiles were not rated for their reliability a poor quality of cable might have answered.

If a cable gave out in those days only a few minutes' time was required to take out the old cable and replace it with new cable.

Since the advent of electric lighting and starting devices and electric gear shifts high quality cable is essential to get 100 per cent efficiency.

It is practically out of the question to expect a car owner to be familiar with every part of his elec trical system.



The car maker as well as the starting and lighting manufacturers owe it to themselves and their customers to use the best cable they can buy to make the wiring permanent and effective.

Packard high quality cable alone meets all of the exacting requirements. Every foot of Packard cable is submitted to rigid tests which eliminate all danger of ever getting a piece of defective cable. It costs a little more because it lasts longer and always makes good.

#### This Hanger Free

A 16x20 six color reproduction of the Packard Girl painting by Liebscher will be sent you with your initial order. Samples of cable and prices on request.



#### The Packard Electric Co.

WARREN, OHIO Dept. D



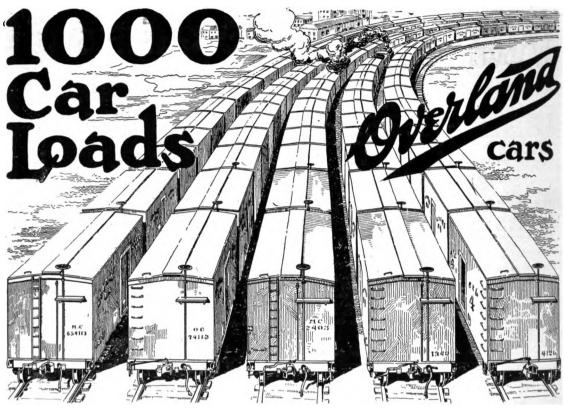












### For One Dealer

W E have one dealer who takes 1000 carloads of Overlands every twelve months.

That's 5000 cars.

This dealer wired us a few months ago and wanted 7000 cars. But we could not supply them.

Other dealers take 2500, 2000 and 1500 Overlands apiece.

Even the 1500-car dealer takes more cars than the largest single factory in Germany turns out.

There are over 200 American automobile manufacturers, who do not make in a year

as many cars as our one single 5000-car Overland dealer takes in the same period.

If you think this over for a moment these figures will mean something to you.

It certainly is reasonable to assume that we must be giving more car for less money than any other manufacturer in the business.

If we were not, we could hardly be doing the largest business.

That's sound logic.

If you will just take the time to make a few specification comparisons you will find the cost of the Overland is 30% less than that of any other similar car made.

Our catalogues will be sent on request. Please address Dept. 50

### The Willys-Overland Company, Toledo, Ohio

Manufacturers of the famous Overland Delivery Wagons, Garford and Willys-Utility Trucks. Full information on request.

\$950

Completely Equipped f.o.b. Toledo

Electric head, side tail and dash lights Storage battery 35 horsepower motor

33 x 4 Q. D. tires 114-inch wheelbase Mohair top, curtains and boot

Stewart speedometer Clear-vision windshield Electric horn \$1075

With electric starter and generate.

Vol. XXXVIII

New York, U. S. A., Thursday, February 19, 1914

No. 9

### MITCHELL-LEWIS DISPOSES OF ITS WAGON BUSINESS

Sells it to International Harvester Interests and Will Produce Motor Cars Only — Financial Condition Strengthened.

Hereafter the Mitchell-Lewis Motor Co., of Racine, Wis., will devote itself wholly to the production of motor cars, which is to say that it has disposed of its entire horse wagon interests, which constituted the original foundation of the company. The wagon business has been taken over by the Mitchell Wagon Co., incorporated under the laws of Wisconsin with an authorized capital of \$500,000.

The new wagon company, it is stated, is made up chiefly of Eastern men, who are identified with the International Harvester Co. The purchase price is not public property, but the Mitchell-Lewis people have let it be known that it is sufficient to enable it to pay off the remainder of its gold note issue of \$2,500,000, which was made in 1911. The transaction also releases for use approximately \$2,000,000 and further arrangements have been perfected for the floating of \$500,000 one-year 6 per cent. notes which will bear date August 1, 1914.

The sale of the wagon business was confirmed at the annual meeting of the Mitchell-Lewis company last week, at which all of the officers were reelected, as follows: H. L. McClaren, president; John W. Bate, first vice-president and general manager; W. T. Lewis, second vice-president; W. H. Armstrong, secretary; F. L. Mitchell, treasurer. In addition to these officers, the directors are Warren J. Davis, Otis C. Friend and Martin J. Gillen.

The wagon plant just disposed of is the nucleus around which the present Mitchell-Lewis organization was built. It was established as the Mitchell

Wagon Co. by Henry Mitchell in Fort Dearborn, which is now the city of Chicago, in 1834. Eleven years later the business was removed to Kenosha and in 1857 to Racine. William T. Lewis, who married Mr. Mitchell's daughter. joined the firm in 1864 when it became the Mitchell & Lewis Co. In 1884 the business was incorporated as the Mitchell & Lewis Co., Ltd. In 1902 W. T. Lewis and his son, Capt. Wm. Mitchell Lewis, organized the Mitchell Motor Car Co., which was operated as a separate corporation until 1910, when all of the various Mitchell and Lewis interests were consolidated in the present \$10 .-000,000 Mitchell-Lewis Motor Co.

#### Asks Damages for Infringement Threat.

Because it is alleged he threatened to bring suit for infringement of patent and failed to do so, the Positive Supply Co.. of Davenport, Ia., has instituted an action for damages in the Federal court in Cleveland, O., against Cecil F. Adamson, doing business in East Palestine. O., as the Adamson Mfg. Co. The Positive company manufactures a vulcanizer of that name and claims that its reputation and business have suffered because of threats circulated by Adamson. As the suit challenges the right of a patentee to issue "warnings," or threats, the outcome is of wide interest.

#### Ford Denies Tire Factory Yarn.

If the Ford Motor Co. has purchased land in Akron, O., or anywhere else, for the purpose of erecting a tire factory, the Ford company itself knows nothing about the transaction, the alleged news of which has been printed in many papers during the past week. F. L. Klingensmith, secretary of the Ford company, says that it has not purchased land anywhere for such a purpose and positively has no intention of taking up the manufacture of tires. The use of the name Ford has become such an attention arrester that even real estate speculators appreciate the value of it.

### WANTS EVERYONE TO LET ITS GARAGE DOOR ALONE

Big New York Taxicab Company
Made Defendant in New Line of
Patent Litigation — Ogden
Door of Novel Design.

Nearly everything connected with an automobile having been the subject of a tent litigation, the garage door now has been brought forward to monopolize a portion of the limelight, so to speak; the light was turned on this week when the Patent Appliance Co., of New York City, filed suit in the United States District Court in New York City against the New York Transportation Co., a taxicab and 'bus operator, charging infringement of the John Edward Ogden patent, No. 973,691, granted October 25. 1910.

The door in question has separate upper and lower halves; the lower half, when it is desired to open the door, slides up over the face of the upper half and the two halves then continue upward, the top moving outward until the door halves are horizontal.

This construction, it is claimed, saves the room that is required for a swinging door and is claimed to be better than the sliding door, besides being capable of operation in cases where there is not sidewall or other support in which a door may slide.

The suit is virtually against the United States Metal Products Co., of College Point, N. Y., which, it is stated, made the three doors which the New York Transportation Co. is using. The J. Edward Ogden Co., of New York City, is a licensee under the Ogden patent, but has nothing to do with the suit because of the fact that under the terms of its license the Patent Appliance Co., the owner of the patent, is bound to take care of all cases of infringement which may arise.

### PACKARD DISCONTINUES "ANNUAL MODEL" POLICY

Readjustment of its Plans Carries with it No Shipments During Two "Low" Months—Causes of Its Decision.

There will be no 1915 Packards, or 1916's or '17's; for the Packard Motor Car Co. has definitely abandoned the annual model policy.

Until this year the Packard people were probably the most conspicuous remaining exponents of the "season model." Usually two of these models were brought out-one in the spring and one in the fall. Each recurring twelvemonth, however, has seen a narrowing of the room for change or other improvement until, in the words of President Joy himself, the Packard "chassis have become standardized and our present design promises to remain substantially unchanged for several years." "Shop conditions," he adds, have been simplified and we are in a position to outline with much greater assurance than ever before our future program in accordance with statistical demands of the public."

By the rearrangement of its selling plan, the Packard company will accept no specifications for shipments in July and August, which have been found to be the "low" months. This policy will permit of the making of manufacturing plans and shop alterations at the most convenient period.

Packard "38" and "48" chassis with full line of 20 or more body styles will be offered for delivery next fall instead of only one line of chassis, as was the case last fall.

"We have labored earnestly to get into position to meet the demands for deliveries in the 'peak load' months," says the Packard announcement. "April was 'peak load' month last spring, with May, March and June close up in the order named. By operating our manufacturing departments at a necessarily constant rate in the winter months, when the delivery requirements are from onethird to one-half of the spring demand, we are able to accumulate bodies in the rough and machined stock for chassis. By this method we are enabled to finish bodies and assemble chassis at a rate to meet as far as practicable the 'peak load' demands during the months of March, April, May and June.

"The heavy draft for cars in the fall and early winter is met by similar oper-

ations in the factory during the summer months of June, July and August, when our patrons are chiefly at the seashore, in the mountains or abroad."

These returning vacationists who seek enclosed bodies in September and October, and who complain when they cannot obtain them, rarely apprecitae the length of time it takes to put through the factory a car of the Packard type. In fact, it is doubtful if very many of those in certain parts of the trade are aware that it requires from 100 to 110 days to complete orders for certain types of Packards, which, however, is the case. Even when the desired type of body is in stock, from four to six weeks may be required to complete the painting and upholstery in accordance with the buvers individual desires.

#### Avery Granted 12 Months' Extension.

To tide over a financial stringency which has arisen in its affairs, the creditors of the Avery Co., of Peoria, Ill., which manufactures motor wagons and tractors, in addition to a large line of agricultural implements, have granted an extension of one year with a privilege of a further extension for a similar period. The extension notes, to an amount exceeding \$2,000,000, bear 6 per cent. interest payable quarterly. The creditors' committee, which investigated the Avery affairs and which recommended the extension, found that the company is perfectly solvent, its assets being \$6,000,000 and its liabilities approximately \$2,200,000.

#### Walpole Tire Plant to be Sold.

After several months' consideration, the receivers of the Walpole Tire & Rubber Co., of Walpole, Mass., which failed in August of last year, have recommended that the property be sold. Originally the assets of the company were listed at \$4.126.635. and its liabilities at \$1,355,359, but according to the receiver's last report the assets are now \$777,776 and the liabilities \$420,823. Sufficient funds are in hand to pay a creditors' dividend amounting to between 5 and 10 per cent. of the claims.

#### Bretz Ceases Sale of Hartford Parts.

The selling arrangements between the J. S. Bretz Co., of New York, and the Hartford Auto Parts Co., of Hartford, Conn., have been terminated and the latter hereafter will market its own product. The Bretz company will confine itself to the importation and sale of F. & S. ball bearings, German chrome steel balls and Bowden wire control mechanism

### SAYS KLAXON HAND HORN IS COPY OF LONG DESIGN

Johns-Manville Brings Unfair Competition Suit Against Lovell-McConnell—Numerous Other Horns Suits Active.

Reversing the tables, the H. W. Johns-Manville Co. filed suit last week in the United States District Court in New York City against the Lovell-McConnell Mfg. Co., claiming that the latter copied the Long Horn when the Klaxon hand horn was brought out and that the sales of the Klaxon hand signal constitute unfair competition and have done \$25,000 damage to the Long horn business.

The Long horn has been attacked in infringement suits by the Klaxon company and the two concerns have locked horns in several suits; the last, however, states that the Long horn was placed on the market prior to May l, 1911, and that the Klaxon did not appear until the latter part of 1913. It is charged that the Klaxon is a "painstaking and wholly unnecessarily exact imitation" of the Long "as to shape, size, decoration, form, material and details"; and that the Klaxon horns have found a ready sale because it is an "exact duplicate of plaintiff's horn."

It is further charged that the Klaxon company aimed wilfully to deceive the public and that its horn is inferior "in construction, workmanship, quality and efficiency" to the Long and that this has wrought an injury to the plaintiff's good name.

The Long horn is involved in a suit of reversed order, brought in the United States Court in Brooklyn by the Lovell-McConnell company against the Oriental Motor Supply Co. In this case infringement of the Klaxon patents, Nos. 923,048, 923,049 and 923,122, is charged. The Johns-Manville company also is awaiting a decision on its appeal in the Federal court in New York of a denial of its motion for an order restraining the Klaxon company from interfering with the Long horn advertising contracts.

There are several Klaxon suits against metropolitan dealers who handled Newtone horns, and hearings which were to have been held last week have been postponed to Friday, 20th inst. Today final hearing will be had in suits in the Federal court in New York against three dealers who used Sparton horns; the dealers are the Jackson Eastern Distributers, Haynes Automobile Co. and the Garland Automobile Co.

#### **AUTOMOBILE EXPORTS OF** 1913 GAIN 19 PER CENT.

Cars, Parts, Engines and Tires to Value of \$38,840,000 Sold Abroad -Strong Upward Trend in All Products.

With a total valuation of \$38,840,376. the exports of cars, parts, engines and tires from the United States to foreign countries during the calendar year of 1913 exceeded the shipments of 1912 by \$6.172,840-an increase of 19 per cent. Of the several components making up this valuation each gained with the exception of engines, and this class of exports increased substantially in value but lost slightly in number.

Of the total, \$27,029,451 represents cars, of which 26,889 were taken by foreign purchasers, and in point of value the vehicles advanced by \$3,325,462, or 14 per cent., as compared with the preceding year; the number of cars was 3,619, or 13 per cent., greater. The statistics of the Federal government for 1912 did not classify pleasure cars and trucks separately until July 1 of that year, which makes it impossible to compare the relative shipments of these vehicles separately.

Canada is in the lead of America's other customers, having purchased 6,051 cars valued at \$8,177,256, the valuation being twice that of the purchases of any other two countries: in number of cars. however, the United Kingdom is a close second with 5,152. The greatest gain was made by the division known as Other Countries, which spent \$1,152,043 with American manufacturers, ranking

#### MOTOR WORLD

first also in number of cars gained, it taking 1,396 more. The next largest gainer was Asia and Other Oceania; to this part of the world there went 717 more cars than in 1912 and the amount paid for them was greater by \$713,419.

The next largest gains were: Germany, 567 cars and \$490,189; South America, 512 cars and \$468,879; United Kingdom, 512 cars and \$447,929; Other Europe, 297 cars and \$275,299. Canada, which at one time increased its takings of American cars regularly, is entered in the loss column as compared with 1912; despite the fact that it was the largest purchaser it took 1.370 fewer cars and spent \$682,438 less. The only other loss item was recorded in Mexico, where, doubtless due to the disturbed condition of the country, the sales were 47 less in volume and \$50,875 less in value.

Parts increased \$1,665,987, or 36 per cent. The engines sold in foreign lands were 214, or 2 per cent., fewer, but cost the buyers \$492,836, or 43 per cent., more. The increase in tire exports amounted to \$588,555, or 18 per cent. During 1912 the average value of cars exported was \$999 and in 1913 it was \$1,005, an increase of \$6.

The gains for the whole year of 1913 are reflected in the exports during December, the closing month; the shipments of cars for that period gain by 378 cars, or 18 per cent., and \$91,332, or 4 per cent. Parts advanced \$172,678, or 47 per cent. Engines decreased 517, or 60 per cent., in number, but gained \$47,567, or 47 per cent., in value. The tire shipments increased by \$108,040, or 57 per cent., and the grand total was greater by \$419.617, a gain of 15 per cent. The figures in detail are shown by the subioined table.

#### \$35,000.000 IS TOTAL OF **GERMANY'S EXPORT TRADE**

Fatherland's Foreign Car Sales in 1913 Increase 18 per Cent .--Truck Business Gains-Imports Just Even.

German motor vehicle exports for the year 1913, according to official figures which just have become available. reached the impressive sum of \$21,800,-000, while the aggregate value of the parts shipped from the Fatherland reached \$13,820,000, bringing the grand total to \$35,620,000, of which \$666,000 represent motorcycles. The exports of complete vehicles, including pleasure cars, trucks and motorcycles, show an increase of \$3,450,000 over the exports of 1912, which stood at \$18,350,000, or slightly better than 18 per cent. The trade in parts, on the other hand, in value at least, shows a slight loss, their valuation for 1912 being \$13,950,000, which is \$130,000, or .9 per cent., better than for 1913. In net tonnage, however, the exports of parts during 1913 exceeded those of 1912 by some 15 tons, the figures for the respective years standing at 752.5 and 737 tons.

An amazing feature of the German trade is the very remarkable increase in the exports of motor trucks, 1,304 more vehicles of that type being shipped out of the country during last year than during 1912, representing a gain of 187 per cent. The number of trucks exported in 1913 was 1,999, while in the year previous but 695 were marketed outside the German frontier. Values considered, however, the figures do not seem so im-

		December				Twelve Months Ending December				
_		1912		913		1911		912		1913
T	Number		Numbe		Number		Number		Number	
France	30	\$29,123	120	\$100,418	420	\$449,757	<b>69</b> 8	\$531,163	921	\$710,149
Germany	12	18,516	58	45,810	115	124,615	450	366,914	1,017	857,103
Italy	21	16,335	12	11.236		199,986	288	257.050	314	270.315
United Kingdom	269	215.753	648	484,299	4.031	3.380,266		3.518.671	5.152	3,966,600
Other Europe	110	116,532	160	135,183	795	718.360	1,549	1,295,379	1.846	1,570,678
Canada	557	604,560	227	307,170		5,552,931	7,421	8,859,694	6.051	8,177,256
Mexico	41	86,937	14	21,254	297	490.041	274	459,023	227	408,148
West Indies and Bermuda	54						370	391,890	527	515,762
South America		60,660	72	70,166	300	343,281			2,713	
South America	342	374,183	239	234,905	1,116	1,356,445	2,201	2,539,166		3,008,045
British Oceania	273	239,961	495	431,530	2,476	2,217,762	3,385	3,091,966	3,564	3,286,860
Asia and Other Oceania	181	176,011	137	134,891	813	795,576	1,650	1,640,369	2,367	2,353,788
Other Countries	123	122,241	207	175,282	280	<b>295,341</b>	794	752,704	2,190	1,904,747
Total cars	2.013	\$2,060,812	2,389	\$2,152,144	15.807	\$15,924,361	23,720	\$23,703,989	26,889	\$27,029,451
Commercial†	87	165,350	88	100.660	15.807	15,924,361	±375	1690,104	1,009	1,686,807
Passengert	1 026				13,007	13,724,301	‡9,485	<b>‡9,298,350</b>	25,880	25,342,644
Passenger†	1,926	1,895,462	2,301	2,051,484		2 254 122				6,270,116
Parts*	• • • • •	367,364	••••	540,042		3,254,123	• • • • • • • • • • • • • • • • • • • •	4,604,129	• • • • • •	0,270,110
Total cars and parts*	2,013	\$2,428,176	2,389	\$2,692,186	15.807	\$19.178,484	23,720	\$28,308,118	26,889	\$33,299,567
Lightes	854	100.753	337	148,320	<b>‡</b> 1,693	1201,409	9.029	1.137.285	8.815	1,630,121
Tires	057	187,434		295,474	+1,020	2,458,177		3,222,133		3,910,688
***************************************		107,101		275,777						
Total value all products		\$2,216,363		\$3.135.980		\$21,838,070		\$32,667,536		\$38,840,376

<sup>\*</sup> Does not include engines and tires. † Not separately stated prior to July 1, 1912. ‡ Covers only last half of year.

pressive, for there was a marked falling off in the average value of the trucks exported—\$1,578 as against \$2,678. All considered, however, the valuation of the trucks exported during 1913 exceeded that of the 1912 exports by 69 per cent.; the values for the respective years are \$3,155,000 and \$1,862,000, the increase being \$2,293,000.

The opposite trend is indicated by the average value of the pleasure cars, the average price of which in 1912 was but \$1,970, while in 1913 it reached \$2,160.

In the number of cars exported, the figures disclosed a loss of 104 cars, or 1.3 per cent.; during 1913 but 7,849 machines were sent out, in contrast to 7,953 for the previous twelvemonth. But in value there was an increase amounting to \$1,390,000, or 8.9 per cent. The value of the pleasure car exports for 1913 was \$16,990,000, as against \$15,600,000, the valuation of the exports during 1912.

The following table gives the quantities of pleasure cars taken by the six leading customers of Germany expressed in tons. As a ton is the approximate weight of the average vehicle, the table roughly expresses the number of vehicles imported by each country from Germany:

	1913.	1912.
Russia	2.564	1.756
Austria	1.061	1.080
Argentine	822.5	895
Great Britain	742.5	104.5
Brazil	586	1.062
Netherlands	527	571

The United States is 23rd on the list; its purchases were 105 tons for 1913 and 98 for the preceding year.

In the matter of imports, the year was a "stand-off," the percentage increase being but .06 and the actual increase but \$2,000. During 1913 vehicles to the value of \$3,522,000 were imported as against \$3,520,000 for the preceding year. The figures include pleasure cars, motor trucks and motorcycles.

Segregated, the figures reveal the fact that the pleasure car imports increased 8 per cent. in number and 4 per cent. in value during the twelvemonth, while the commercial vehicle imports fell off an even 20 per cent. both in the number of separate vehicles and in the value. The value of the pleasure vehicles imported during the respective years was \$2,920,-000 and \$2,795.000, the increase being \$125,000; the number of vehicles for the respective years was 1,830 and 1,689, the increase being 141. Quite as a matter of course, the United States supplied the greatest number of vehicles, the exports from this country to Germany having very nearly doubled during the past year. France, Belgium and Great Britain follow in the order named.

#### TRAFFIC MEN OBJECT TO HIGH RATES ON DUNNAGE

Seek to Prevent Railroads Withdrawing "Free Freight" on Blocking Used in Shipping Cars— Cost \$350,000 Last Year.

Dunnage—it probably doesn't mean what you think it means—cost the automobile industry \$350,000 during last year, according to competent judges. The fact that it had cost and is costing so much was responsible for the appearance of the traffic managers of several large automobile corporations before the Interstate Commerce Commission at a hearing which was held in Chicago last week.

Dunnage, since you must know, is the lumber and other blocking materials used by shippers in making secure certain kinds of freight in railroad cars. Motor vehicles naturally require a lot of such dunnage, particularly since the custom of double-decking them in freight cars has become the vogue. When this is done, the capacity of the railway car is practically doubled and the lumber used not only means an expense to the automobile manufacturer but weighs approximately 1,700 pounds.

All of this was brought out before the Interstate commission and the most was made of the fact that the high rate applicable to automobiles was assessed on the lumber also. The proceedings before the commission, which on behalf of the automobile interests were led by J. S. Marvin, general traffic manager of the National Automobile Chamber of Commerce, were in the nature of a general investigation brought about by an attempt on the part of railroads operating in the Southwest to withdraw an allowance which they had been making to the extent of 500 pounds free of freight charges, and the decision arrived at in this case will be particularly important in the fact that it will undoubtedly control the practice of charging freight, or, on the other hand, carrying free the material used for double-decking and blocking automobiles in freight cars not only to the Southwest but to all sections of the country, including the Pacific

In addition to Marvin, the automobile traffic managers who appeared were: E. N. Hodges, Hupp Motor Car Co.; G. M. Sherman and H. E. Johnson, Studebaker Corporation; C. W. Eggers, Willys-Overland Co.; W. M. McCloud, Buick Motor Co.; A. C. Westfall, Cadillac Mo-

tor Car Co., and C. B. Armstrong, Hudson Motor Car Co.

#### Motokart Affairs Being Readjusted.

For the purpose of taking over the Tarrytown (N. Y.) Motor Car Co. and the Steinbock Engineering Co., of the same place, application for a charter under New Jersey laws has been made by the Motokart Co., which will make its headquarters in the United States Rubber Building in New York City.

During the past six months, the Tarrytown company has been exploiting the Motokart parcel delivery wagon, for which the Steinbock Engineering Co. supplied engines and other mechanical units, but failure to obtain promised capital embarrassed operations and it is to accommodate new interests which will provide necessary capital that the amalgamation of the two companies is being brought about. The Motokart Co. will be capitalized at \$500,000. As it is stated that no trouble has been experienced in securing orders and agents, of whom 600 are on the books, it is probable that operations will be conducted on an even larger scale than originally projected.

Two Offices for Shaw in Grant Motor. At the annual meeting of the Grant Motor Co., last week, the first since it established itself in Findlay, O., D. A. Shaw was elected president and treasurer, George D. Grant and H. J. Koehler, vice-presidents, and George W. Waite, secretary. In addition to these officers, the board of directors, which was reelected, includes D. Grant, Charles A. Grant, George S. Salzman, James M. Howe and A. Freschl. Salzman is factory manager for the Grant company. Howe is engineer, and Waite. sales man-

#### Case Floats \$12,000,000 Mortgage Bonds

Through a syndicate of Chicago and New York bankers, the J. I. Case T. M. Co., of Racine, Wis., has arranged to dispose of \$12,000,000 first mortgage, six per cent. serial bonds, maturing annually from December 1, 1914, to December 1, 1936. The financing arrangement practically funds the Case company's obligations, and, it is stated, "insures its financial idependence for a long time."

Land in Charge of Revived Disco.

The Disco Co., which at the receiver's sale last month was purchased by Mansell Hackett, has resumed operations at its plant at Leib and Larned streets, in Detroit. F. J. Land, who, it is stated, designed the Disco starter, is in active charge of 'he business.

# The VVeek's Incorporations

Springfield, O.—Motor Part Co., under Ohio laws; authorized capital, \$25,000. Corporators—G. B. Swope, C. W. Fritz, Sr., and J. H. Lawill.

Mansfield, O.—League of American Automobilists, under Ohio laws; authorized capital, \$1,000. Corporators—J. E. Ladow, Jacob Reinhart and Norris Kirkpatrick.

Galion, O.—Norton Motor Plow Co., under Ohio laws; authorized capital, \$300,000. Corporators — R. A. Norton, B. L. Sites, A. W. Lewis, G. W. Nickels and others.

Mount Airy, N. C.—Mount Airy Motor Co., under North Carolina laws; authorized capital, \$10,000; to operate a garage. Corporators—S. E. Marshall & Sons, and others.

Toledo, O.—Gollingwood Garage Co., under Ohio laws; authorized capital, \$10,000; to operate a garage. Corporators—Carl Lemster, Otto L. Hankinson, and Karl S. Lemster.

Steubenville, O.—Midgley Tire & Rubber Co., under Ohio laws; authorized capital, \$550,000. Corporators—A. C. Lewis, Thomas C. Jones, J. Oscar Naylo, and others, of Steubenville.

Boston, Mass.—J. G. Riga & Sons Co., under Massachusetts laws; authorized capital, \$25,000; to manufacture motor cars. Corporators—Joseph G. Riga, Jos. C. Riga and Harley M. Riga.

New York, N. Y.—Bosch Auto Exchange; under New York laws; authorized capital, \$20,000. Corporators—Max Frieder, Emma D. Dietz and John J. Pheelan, all of 261 Broadway.

Chicago, Ill.—Hoff Auto Livery Co., under Illinois laws; authorized capital, \$2,500; to conduct an automobile livery. Corporators—Guernsey Orcutt, Edward A. Grams and Abner J. Stilwell.

Chicago, Ill.—C. A. Coey Motor Co., under Illinois laws; authorized capital, \$50,000; to manufacture automobiles and accessories. Corporators—C. A. Coey, H. L. Wells and H. H. Morgan.

Los Angeles, Cal.—Walden-Gray Automobile Co., under California laws; authorized capital, \$25,000. Corporators—E. A. Walden, A. C. Gray, C. A. Gray, C. F. Laverty and V. G. Armstrong.

Cleveland, O.-Richard Automobile

Co., under Ohio laws; authorized capital, \$250,000; to manufacture automobiles. Corporators—Francois Richard, F. M. Brady, both of Cleveland, and others.

Charleston, S. C.—Automobile Transportation Co., under South Carolina laws; authorized capital, \$500; to conduct a general motor transfer business. Corporators—J. A. Barker and others.

Boston, Mass.—Pathfinder Sales Co., under Massachusetts laws; authorized capital, \$40,000; to deal in motor vehicles. Corporators—Frank P. Parker, Paul R. Dole and George R. Emerson.

Chicago, Ill.—Fiat Motor Co. of Illinois, under Illinois laws; authorized capital, \$2,000; to deal in motor cars, parts and accessories. Corporators—M. Phillips, Reed F. Cutler and Richard Travers.

Louisville, Ky.—Motor Sales Co., under Kentucky laws; authorized capital, \$6,000. Corporators—Hamilton O. Herr, St. Mathews; Robert W. Herr, Jr., St. Mathews; Addison W. Lee, Jr., Louisville.

Burlington, Wis.—Edward Zwiebel Bros. Co., under Wisconsin laws; authorized capital, \$15,000; to operate a garage. Corporators—Edward Zwiebel, George Zwiebel, Leo J. Zwiebel and Ray Zwiebel.

Sioux City, Ia.—Motor Mart Repair Co., under Iowa laws; authorized capital, \$10,000; to conduct an automobile repair business. Corporators—G. N. Ramesbotham, L. D. Baggs and Frank P. Simme.

Laporte, Ind.—Indiana Auto Supply Co., under Indiana laws; authorized capital, \$10,000; to conduct a general automobile and repair business. Corporators—Arthur Gaul, William Pelz and Axel Lindgren.

Boston, Mass.—Duval Spring Tire Co., under Massachusetts laws; authorized capital, \$100,000; to manufacture spring tires. Corporators—F. S. Plaisted, Arlington; L. Duval, Boston; R. B. Whitman, Wellesley.

St. Louis, Mo.—Wassmann & Miller Automobile Co., under Missouri laws: authorized capital, \$2,000; to buy, sell, repair and deal in automobiles, etc. Corporators—Elvir Wasmann, Tony Miller and May Miller.

New York, N. Y.—Owego Car Co., under New York laws; authorized capital, \$150,000; to conduct an automobile business. Corporators—George R. Ramsey, William I. Payne and Winslow Ball, all of 286 Fifth avenue.

Chicago, Ill.—Sheridan Vulcanizing & Tire Co., under Illinois laws; authorized capital, \$5,000; to manufacture and sell rubber tires, automobile accessories, etc. Corporators—D. F. Ryan, L. N. Phillips and Percival Steele.

Indianapolis, Ind.—Electric Sales Co., under Indiana laws; authorized capital, \$10,000; to conduct a general automobile and automobile storage business. Corporators—A. W. Hutchinson, H. M. Agerter and R. K. Smith.

Boston, Mass.—New England Pressed Steel Co., under Massachusetts laws; authorized capital, \$26,250. Corporators —Frank A. Barbour, Burton R. Felton, John A. Calhoun, W. Howard Townsend and Henry L. Whittlesey.

Brockton, Mass.—Sterling Motor Co., under Massachusetts laws; authorized capital, \$50,000; to manufacture motor-cycles, motor cars, etc. Corporators—Wm. T. Marsh, G. M. Greene and Rena M. Mackin, all of Brockton.

Chicago, Ill.—The House That Jack Built, under Illinois laws; authorized capital, \$150,000; to conduct an automobile and general catering business. Corporators—A. E. Frost, John Cuthbertson and Orpheus A. Harding.

Montreal, Can. — Canadian Halley's Motors, Ltd., under Canadian laws; authorized capital, \$10,000; to manufacture motor lorries, automobiles, etc. Corporators—Lawrence MacFarlane, Chas. A. Pope and others, all of Montreal.

Augusta, Ga.—DuPre Automobile Co., under Georgia laws; authorized capital, \$15.000; to conduct a general automobile business. Corporators—J. L. Fowler, Hailey; W. P. Fowler, Grand Forks, No. Dak.; J. L. Jameson, Richfield.

Chicago, Ill.—Chicago Automobile Transportation Co., under Illinois laws; authorized capital. \$5,000; to own and operate for hire lines for transportation of persons or property. Corporators—Samuel E. Kyon, James H. Knight, and W. H. Jacobs.

#### 1913 CAR IMPORTS LESS 1912'S BY NEARLY HALF

Value of Foreign-Bought Vehicles Shrinks by \$844,714—Less by 42 per Cent.—Germany Only Gainer—Parts Advance.

Dropping from 868 cars valued at \$1,999,587 to 492 cars with a valuation of \$1,154,873, the importation of automobiles during 1913 was less by nearly half what it was in 1912; the number of cars sold in America by foreign makers was fewer by 376. or 43 per cent., and by \$844,714, or 42 per cent.

Despite this decrease in the total figures, one foreign country made a substantial gain in its American trade; this was Germany, which sold 18 more cars and increased the total of its business by \$61,841, or 40 per cent. As to the others, France, which is the largest seller of cars to the United States, decreased its sales by 273 cars and \$656,417, a loss of 58 per cent. in number and the same in value. The next heaviest retrogression was by the United Kingdom, which sold 83 fewer cars and received \$186,109 less. Italy's sales fell off by 24 cars and \$21,-373. The importation of parts made a gain of \$172,119, or 62 per cent.

The average value of the foreign cars purchased by America in 1912 was \$2,-303, and during 1913 this figure was varied but little; it was \$2,347, an increase of \$44. The total value of cars and parts decreased by \$672,595.

During December, 1913, as compared with that month of 1912, the imports of cars decreased by 49 cars, or 56 per cent., and in value by \$133,997, or 59 per cent. As was the case for the whole twelve months, the importation of parts advanced, being \$125,793 greater. This is an advance of about 1,000 per cent.

The average value per car for December. 1912, was \$2.616 and for December. 1913. \$2.464, a decrease of \$152, or 6 per cent. It may be interesting to note that although Germany was the only country to record a gain during the 12 months, it sustained the heaviest per-

centage loss in December; its shipments fell off by \$15,953, a decrease of 81 per cent. The figures in detail are shown by the subjoined table.

Poole Gets Hupp Australian Berth.

Pursuing its policy of locating exclusive factory representatives in all of the more promising centers abroad, the Hupp Motor Car Co., of Detroit, has appointed C. G. Poole its permanent representative for Australasia, with head-quarters in Sydney. He is thoroughly familiar with Hupmobiles and their affairs and will take over the duties performed by E. A. Eager, who first introduced the Hupmobile in Australia, but who latterly has been handling several other cars.

#### The \$5,000 Kelly Merely a "Hang-Over."

Reports freely printed that the Kelly Motor Truck Co., of Springfield, O., has reduced its capital stock to \$5,000, have brought annoyance to the Kelly-Springfield Motor Truck Co., of that city, whose capital stock or policy has undergone no change of any sort. The Kelly company is merely a "hang-over" which is not actively doing business but simply maintaining legal existence until several outstanding claims are settled.

#### Birdsall to Build Kosmath Light Wagon.

The Kosmath Co., of Detroit, of which E. T. Birdsall, the veteran engineer, is one of the principals, has purchased from the receiver of the Miller Car Co. the designs and material for a 1,000-pound delivery wagon which was in hand at the time of the Miller failure last month. The actual production of the wagon, which will hereafter be styled the Kosmath, will be taken up by Birdsall's company.

#### Three More Added to M. A. M. Roll.

Three more applicants have met the requirements of the Motor and Accessory Manufacturers and have been duly elected to membership. They are as follows: Michigan Steel Casting Co., Detroit, Mich., New Haven Clock Co., New Haven, Conn., and the Standard Tool Co., Cleveland, O.

### PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few Leave the Industry.

George Bell, former sales manager of the Esterline Co., has been appointed manager of the Remy Electric Co.'s Detroit branch. He succeeds E. F. Willett, resigned.

Ralph D. Webster, for many years sales manager of the Eclipse Machine Co., of Elmira, N. Y., who several months since became an efficiency expert, has taken charge of the Batavia Rubber Co.'s New York branch at 1906 Broadway, which, for the present, at least, he will supervise. The former manager was Albert Olsen.

Bruce Daniels, for two years advertising manager for the Motor Car Mfg. Co., of Indianapolis, maker of the Pathfinder car, has resigned that position to take up similar work for the Stutz Motor Car Co., of the same city. He will also serve as an assistant to W. D. Myers, the Stutz sales manager, who expects to spend most of the next three months on the road.

Norris N. Mason, who after many years connection with imported cars, joined the Henderson Eastern Motors Co., of New York, at the same time announcing that the imported car had forever "shot its bolt" in this country. has returned to the Renault agency from which he came. He has effected a new arrangement with E. Ridel, who represents the Renault interests in this country.

H. R. Fletcher has been appointed district sales manager for the Stewart Motor Corporation for New York State, Northern and Eastern Pennsylvania, and Quebec and Ontario Provinces in Canada. J. J. Martin has been appointed district manager for the Middle West States by the same company. He will make his headquarters in Chicago.

	1912 December 1913				Twelve Months Ending De						
France Germany Italy United Kingdom Other Countries	7	\$100.589 19.523 18.909 51,523	Number 22 1 5 6	Value \$56.187 3,570 9.240 16.990	Number 341 160 131 173	Value \$770,643 350,239 203,733 403,506	Number 469 63 109 137	Value \$1.123.584 152,860 174.412 347,776	Number 196 81 85 54	Value \$467.167 214.701 153.039 161.667 158.299	
Total cars	07	\$227,652 12.694	38 .	7.668 \$93,655 138,487	$\frac{167}{972}$	370,360 \$2.098,481 347,767	90 868	200,955 \$1,999,587 275,819	492	\$1,154.873 447.938	
Total cars and parts	87	\$240,346	38	\$232 142	972	\$2.146.219	969	\$2 275 406	492	\$1,602.811	

# In Salesroom and Garage

Following the dissolution of the firm of Smith & Heberle, of 195 West 6th street, St. Paul, Minn., Leighton H. Smith has opened salesrooms at 197 West 5th street; he has the Jeffery agency and will maintain his service station at 48 West 10th street until March 1, after which all his business will be centered at the 5th street address. Heberle, his former partner, continues at their former location as Chalmers dealer.

L. J. Hadley, for ten years connected with the Kissel and Studebaker companies in the Northwest, and E. O. Merchant, who for several years has been Minneapolis salesman for the Wilcox truck, have formed a partnership and have opened salesrooms in Minneapolis at 49-51 10th street south; they have secured the agency for the Menominee truck.

The Hartford (Conn.) Buick Co., which was the Buick Garage prior to January 1, has opened a new service station for Buick cars at 16 Park street; it is 60 feet wide and 120 feet deep and is completely equipped. The salesrooms are to be continued at the former location, 356 Main street.

The Browning Bros. Auto Co., formerly a garage operator in Salt Lake City, has given up the garage and will operate salesrooms only, at 129 South State street; Arch Browning is the head of the company, which handles Cole and Jeffery cars. Later a service station will be opened.

The Rubber Goods Supply Co., of 32 West State street, Akron, O, has changed its name to Excel Rubber Co. The change was made because of the confliction with another concern of a similar name in that city. The company makes and sells tires and tire accessories.

T. W. Trawick and W. P. Darnell, of Bloomington, Tex., plan to institute an automobile passenger service between Bloomington and Victoria, about 12 miles distant; they will make their headquarters in a garage which is being erected on 2nd street in Bloomington.

D. H. Nelson, a retired farmer, and Frank Fairbanks have organized the City Motor Co. in Pendleton, Ore., and will conduct a garage and salesrooms in the Snyder building, a three-story structure on Cottonwood street; they will handle Hudson cars.

Leo and Ray Zwiebel, who have been employes in the garage and plumbing shop of Edward Zwiebel & Bro., in Burlington, Wis., have been admitted to the firm, which will incorporate; Ray Zwiebel will be connected with the garage end of the business.

J. B. Dudley, one-time automobile editor of a New York daily, has become a dealer; he has formed the Lincoln Motor Car Co., in Philadelphia, Pa., and has located in the North American building, from which point he will market the new Lincoln car.

Lewis & Haney is the style of a new firm which is about to enter the garage trade in Sayre, Pa. A garage will be erected on Allison street on property owned by Dr. R. C. Lewis; the other partner, D. C. Haney, will manage the business.

Walter Mills, of Harmony, N. J., is erecting a garage; he formerly was connected with the Red Bank (N. J.) Garage Co., but recently entered the trade for himself and plans to enlarge his business in the new structure.

The Thirtieth Street Garage, of Indianapolis, has been sold by W. H. Lee to Alfred Young, of Denver; Young will remove to Indianapolis and continue the business. The garage is one of the largest in the city.

Harry B. Hartley, who operates a tire and supply business in Boston, Mass., at 243 Columbus avenue, has opened a branch store in Waltham, in the same Statet; it is located at 104½ Moody street.

Charles Hilbert, of Kutztown, Pa., has purchased a site in Allentown, in the same State, and will erect a garage; with a partner, he will operate it under the style Ideal Motor Co.

Richard Odeen and Mahlon Richards have entered the trade in Black River Falls, Wis., under the style Richards Automobile Co. They will stock Buick and Maxwell cars.

J. Radcliffe Jones and L. D. T. Noble have formed the Cambridge Auto Co. in Cambridge, Md. They have the Ford agency and will locate in the Wright Garage.

James J. Filon and Bernard J. Hanrahan are about to open a supply store in Baltimore, Md. They have leased space in a building at 1301 North Charles street.

Glen Payne has purchased a half-interest in the City Garage in Casey, Ill. The other half is owned by Higbee & Co., formerly sole owner of the business.

Earl Gamble, of Toledo, O., has sold his interest in the East Side Garage to his partner, Frank Muntz; Gamble will remove to Arizona in search of health.

The C. & C. Auto Co., of Rockville Center, N. Y., has purchased a garage at 10 Ormond place; the C. & C. business will be removed to that location.

Price Nixon, of Springfield, Mo., who hitherto has been a wood dealer, is about to enter the garage trade; he will build a garage on College street.

E. G. Pollard plans to open a garage in Manito, Ill. He has just completed a brick structure for this purpose; Charles S. Gordon will manage it.

The Enterprise Garage, of Madeira City, Cal., has been purchased by E. C. Washington; the latter owns the Washington Carriage Works.

F. W. Thompson, of Salisbury, N. C., has commenced the construction of a white-front concrete garage; the site is on East Liberty street.

Anton Konda, a member of the City Council of Porterville, Cal., has secured permission to erect a garage; the site is at Olive and C streets.

C. F. Starks has formed the Minneapolis (Minn.) Auto Service Co. and has located at 328 East Lake street; the company will handle supplies and maintain a repair-shop.

Percy Wightman, of Antioch, Cal., has purchased the Bryon Garage, in that town; he will enlarge the garage and continue the business.

M. C. Hutto, of South Jacksonville, Fla., has opened a garage and repairshop on Ames avenue; Hubert Nelson will manage it.

A. B. Shaw, of Corona, Cal., is having a new garage erected; he has the Baker

electric agency. The site is at F avenue and 3rd street.

J. P. Wouten has purchased a garage in Abilene, Tex. He has changed the style to Auto Mart and will continue the business.

Harvey Sellers and Peter Adriotti, of Richmond, Cal., plan to remove to Kingsburg, in Fresno county, and open a garage.

M. Seaton, of Chicago, has secured permission to erect a three-story brick garage at 1707 Estes avenue; it will cost \$75,000.

Authority has been granted to J. S. Jennings, of Raleigh, N. C., to erect a garage on West Davis street; it will cost \$4,000.

Martin Bros. is the style of a new garage and agency business in Mukowonago, Wis. They have the Studebaker agency.

W. B. McGirt has opened salesrooms and an accessory and supply store in Darlington, S. C. He is located on Pearl street.

Frank E. Wing, of Boston, has opened a new service station at 562 Commonwealth avenue; he handles Marmon cars.

Edward Coffey has opened a supply store and repair-shop in Plattsburg, N. Y. It is located at 67 Clifton street.

The College Garage Co. has been incorporated in Whittier, Cal. It will maintain a garage and salesrooms.

The Welt-Lewis Motor Co. has been incorporated in Iowa City, Ia. It plans to erect a garage 100 feet deep.

Soren R. and Hans A. Nelson have taken over the garage business of Johnston & Wesphalen, in Exira, Ia.

Joseph Heidemark has leased a onestory garage at 2508 Park avenue. New York City; he will operate it.

H. W. Cooper, formerly of Sumter, S. C., is about to open a garage in Mayesville, in the same State.

#### Minor Business Troubles.

William A. Buck, an automobile salesman of Pittsfield, Mass., has entered the bankruptcy court; his liabilities are \$2,873.16 and his assets nothing.

William P. Kastner, an accessory dealer in Chicago at 2101 South Michigan avenue, has filed a petition in bankruptcy; his liabilities are \$33,975 and his assets \$17,787.

McKinley Boyle, who went into bankruptcy following the failure of the Atlantic Cehicle Co., of which he was president and treasurer, has been discharged by the Federal court in New York City; his liabilities were \$94,951.

The sheriff has taken charge of the Main Street Garage in Anaconda, Mont., on an attachment secured by L. E. Coscns, who sued on a note for \$2,000; the garage, of which R. E. Richardson was proprietor, has been in financial trouble for some time and is said to owe \$14,000.

#### Recent Losses by Fire.

Merrill, Wis.—L. N. Anson; garage and several cars damaged.

Fargo, N. D.—Wheelock Auto Co.; garage and several cars destroyed. Loss, \$50,000.

Philadelphia, Pa.—John T. Swords, 205 Queen lane, Germantown; garage damaged. Loss, \$3,000.

Freehold, N. J.—Fred S. Voorhees, South street; garage and six cars destroyed. Loss, \$9,000.

New York, N. Y.—Twelfth Street Garage, 245-53 West 12th street; building and 35 cars damaged. Loss not stated.

Minneapolis, Minn. — Kissel Kar branch, 1300 Hennepin avenue; building and three cars damaged. Loss not stated.

Cleveland, O.—Thomas Swan Co., Broadway and Gallop avenue southeast; automobile top factory damaged.

#### Protests Against Columbia Assessment.

While awaiting a buyer for the Columbia plant in Hartford, Conn., the Maxwell Motor Co. has filed a protest against the assessment levied on the property. It is now assessed for \$375,133, made up of \$250,000 for real estate, \$25,000 for stock, \$100,000 for equipment, and \$133 cash in bank. It is claimed by the company that, in making out the list, a mistake of \$50,000 was made in the real estate and another of \$50,000 in the equipment. A year ago the plant was assessed for \$508,634.23, including eight and one-quarter acres of land assessed for \$6,500, and sold to the Capitol City Lumber Co. recently for \$25,000.

Incidentally, reports are circulating that some of the men once identified with the Columbia enterprise, are now hatching a popular priced Columbia electric.

#### Cadillac Again Repudiates "Sixes."

Because of continued circulation of reports that it proposed marketing a six-cylinder car, the Cadillac Motor Car Co.. of Detroit, has found it necessary to again issue a vigorous denial of such intentions. It admits that a number of 'sixes' were built during the past four years, but tests and comparisons "demonstrated conclusively to us that a four-cylinder engine designed with the skill and executed with the precision

which characterizes the Cadillac engine—and scientifically balanced—affords the highest degree of all-around efficiency possible to obtain"; coupled with a two-speed axle, there is nothing left to be desired from the Cadillac standpoint, and it is added that the "Cadillac company has no intention of departing from its policy."

#### National Carbon to Cut "Melon."

The National Carbon Co., of Cleveland, which, among other things, makes the Columbia dry cell, is about to declare a 50 per cent. stock dividend on its common shares, on which, during the last three years, less than 18 per cent. has been paid in dividends. As a preliminary, the company will issue \$6.500,000 additional common and \$1,100,000 additional preferred. At present its capital is made up of \$4,500,000 preferred and \$5,500,000 common.

In addition to cutting the 50 per cent melon, it is stated that the Carbon company will also probably set aside \$500.000 of its new stock as the foundation of a profit sharing plan for its employes.

During last year the corporation made net earnings amounting to \$1,476,621, as against \$1,261,203 during 1912. At the end of the year, its total assets were listed at \$11,695,121, of which \$8.540,000 is represented by real estate, plant. etc.

#### Krit Promptly Meets First Obligation.

Official announcement is made that the Krit Motor Car Co.. of Detroit, has met the first payment in accordance with the terms of extension granted by its creditors several months ago, and which fell due this month. The prompt payment of the obligation conveys its own moral and in addition Howard Crawford, general manager of the Krit company, adds that there never were so many orders in hand as at the present moment, not mere allotments but actual sales with specified dates of delivery.

#### Stromberg Wins Suit Against Zenith.

In the United States District Court in Chicago, on Friday last, 13th inst., Judge Sanborn ruled that five claims, the first, second, fourth, sixth and seventh, of the Ahara patent, No. 684.662, owned by the Stromberg Motor Devices Co., had been infringed by the Zenith carburetter, made in Detroit by the company of that name. The patent sustained covers what is termed the "Atmospheric well principle." The decision was rendered in the suit brought by the Stromberg company against the John A. Bender Co., a Chicago dealer, who handled a car equipped with a Zenith.



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#### WHO WILL BE "STUNG" WORST?

Despite its abject failure abroad, there may be room for honest difference of opinion concerning the permanence of the narrow-gauge cyclecar in America, but of one thing that bears directly on its immediate future there can be small dispute; i. e., that in its present state the budding industry is carrying with it a sting that will be felt in more than one direction. The only room for question is as to who will be "stung" worst—those who are endeavoring to produce the little vehicles; those who are being influenced to provide capital or credit by what seem to be large orders; those who have given bona fide orders and who hope to sell cyclecars or those who will use them.

It is known that some of the largest orders represent merely names attached to pieces of paper; in some instances, they were given with a friendly desire to influence investors; in others, with a view of being prepared to meet a demand should it really arise; but in neither case are the "orders" binding nor do they bring financial risk to the givers. Many of those who have placed orders in good faith are faced by the likelihood that they will have no cyclecars to sell, for with Spring but one lap ahead the number of real manufacturers, and the very much larger number of nearmanufacturers and would-be manufacturers, who are

in position to deliver even a "sample" car is so small as to be practically negligible.

On the other hand, if any considerable number of the large orders were of a bona fide nature, and the makers were able to fill them, the market probabably would be glutted in less than sixty days. And, finally, some of those who are producing, or trying to produce, cyclecars apparently are possessed of the belief that hurriedly fashioning a sheet of tin on a set of four wheels fitted with motorcycle tires is all that is necessary to make a cyclecar—and no great flight of fancy is required to picture what that means to the man who may use such vehicles and ultimately to those who "finance" or produce them. Yes; the great question is: Who will be "stung" worst?

At the present moment, the only person who has made a real dollar out of cyclecars, and who stands to lose nothing, is the press agent who has been prolifically painting the millions that are in them—particularly those which he is paid to boost, the combined outputs of which can be enumerated on the fingers of one hand.

#### ABOUT THE SEEKING FOR ORDERS.

If more men, whether they be manufacturers, dealers or salesmen, and whether they have to do with automobiles or something else, will put themselves in the place of their prospective customer and view things from his angle, the transaction of business would be enormously facilitated.

The fact is suggested by the report of an American consul, which is deemed worthy of special note by the Department of Commerce, to the effect that of the number of prospective buyers brought to the attention of American manufacturers eight out of ten received replies that absolutely prevented intelligent business intercourse. Not only were catalogs furnished in English but prices were quoted in dollars and the American systems of weights and measures employed, the manufacturers having paid no attention to these or other conditions laid down. Instead, their printed matter and correspondence were "sent out in hit-or-miss fashion that is discouraging alike to both consular representatives and intending purchasers."

Of course, from the export standpoint, this criticism is not wholly new. While the foreign order is eagerly welcomed, and is usually in the nature of an event, the efforts made to obtain it are inadequate indeed; yet if the average American manufacturer or merchant who sought to purchase abroad received in return a catalog printed in what is to him unintelligible language, and filled with unintelligible symbols, and the specifications he laid down were otherwise disregarded—if this sort of thing happened it is not difficult to imagine the emphatic flow of language and strong expression of opinion that would follow.

Well aware of the fact, why more Americans do not change their ways and by viewing things from the "other sellow's" standpoint make use of opportunities in proper fashion, is beyond understanding.

### A. A. A. TO TAKE HAND IN CONTROLLING CYCLECARS

Contest Board, Favoring Cooperation with Makers, Offers Representation on Advisory Board —Will Formulate Rules.

The Cyclecar Association of America will have to "guess again."

When the corporal's guard of men rounded up by three or four press agents, foregathered during the Chicago show and assisted at the birth of the association, and who formed at least three near-clubs, it was proposed that the association control cyclecar sport—which does not exist—and it was gravely announced that alliances with bona fide sports-governing bodies would be sought.

But the Cyclecar Association of America reckoned without its host. In taking their "national organization" too seriously, those who promoted it evidently overlooked the fact that the American Automobile Association is the body that controls four-wheeled motor sport and, as such, at its annual meeting, held last December, adopted resolutions which made plain that that body had not overlooked the cyclecar field. And at the meeting of the A. A. A. Contest Board last week matters were brought to the point where it now appears certain that the reins of power will lead where they properly belong-which is to the Contest Board of the A. A. A.

At the session of the Contest Board, that body placed itself on record as favoring the inclusion in the 1914 rules of classifications and regulations governing cyclecar sports. Secretary Stout of the Cyclecar Manufacturers' National Association, which was formed at the same time as the Cyclecar Association of America, though it made no pretenses of "controlling cyclecar sport," was advised to that effect-Stout already had made advances to the A. A. A .-- and was invited to name a representative to serve on the Advisory Board of the Contest Board, which now consists of S. A. Miles, H. A. Bonnell and Wm. Schimpf. Steps now are being taken to formulate and adopt a set of cyclecar classifications and toward the incorporation in the 1914 contest rules of regulations suitable for governing cyclecar contests.

Police Release Insurance Adjuster.

John W. Sherwood, an insurance adjuster, who was arrested last month in New York City in connection with



Feb. 14-21, Pittsburgh, Pa.—Pittsburgh Automobile Show Association's show in Exposition Hall.

Feb. 16-21, Kansas City, Mo.—Annual

Feb. 16-21, Toronto, Ont.—Toronto Automobile Trade Association's 10th annual show in Transportation and Horticultural Buildings.

Feb. 16-23, Memphis, Tenn.—Automobile Association of Memphis's show.

Feb. 17-20, Sioux Falls, S. D.—Sioux Falls Automobile Dealers' Association's second annual show in the Auditorium.

Feb. 17-21, Salt Lake City, Utah—Annual show in the Keith-O'Brien building.

Feb. 18-21, Bloomington, Ill.—McLean County Automobile Club's show.

Feb. 18-21, Easton, Pa.—Automobile show under auspices of Company I, 13th Infantry, N. G. P., in the Armory.

March 18-22, Sharon, Pa.—Dealers' Association's show in the Armory.

Feb. 23-28, Danville, Ill.—Vermillion County show in the Coliseum.

Feb. 23-28, Fall River, Mass.—Annual show in the State Armory.

Feb. 18-25, Albany, N. Y.—Albany Automobile Dealers' Association's pleasure vehicle show in the Armory.

Feb. 21-28, Newark, N. J.—New Jersey Automobile Trade Co.'s show.

Feb. 21, Los Angeles, Cal.—Vanderbilt road race under auspices of the Western Automobile Association over Santa Monica course.

Feb. 21-March 4, Cincinnati, O.—Automobile Dealers' Association's show in the Music Hall.

Feb. 22-March 1, Hartford, Conn.— Hartford Automobile Dealers' Association's show in Park Casino.

Feb. 23, Los Angeles, Cal.—Grand Prize road race under auspices of Western Automobile Association over Santa Monica course.

Feb. 23-25, Albany, N. Y.—Albany Automobile Dealers' Association's commercial vehicle show in the Armory.

Feb. 23-28, Omaha, Neb.—Omaha Automobile Show Association's show.

Feb. 24-28, Syracuse, N. Y.—Syracuse Automobile Dealers' Association's sixth annual show in State Armory.

March 2, 3, 4, Cincinnati, O.—Automobile Dealers' Association's commercial vehicle show in Music Hall.

March 2-7, Utica, N. Y.—Utica Automobile Club's automobile show in the State Armory.

March 3-6, Grand Forks, N. D.-Fifth annual show in the Auditorium.

March 3-7, Fort Dodge, la.—Fort Dodge Dealers' Association's third annual show in the State Armory.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics Building.

March 9-14, Des Moines, Ia.—Automobile Dealers' Association's annual show.

March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics' Building.

March 21-28, St. John, N. B.—New Brunswick Automobile Association's Maritime show in the Armoury.

March 27-28, Racine, Wis.—Racine Automobile & Motorcycle Association's show in Lakeside Auditorium.

April 9-15, Manchester, N. H.—Auto-mobile show.

wholesale automobile thefts, has been discharged from custody; this action was taken upon the recommendation of the District Attorney following a consultation with the chief of the Indictment Bureau.

Sherwood was arrested with 12 other men and was accused of complicity in the theft of cars, some of which were recovered through the negotiations of a middleman.

Sherwood, following his discharge, stated that his "only connection with the matter was that I was acting on behalf of one of the large insurance companies insuring automobiles, and endeavoring

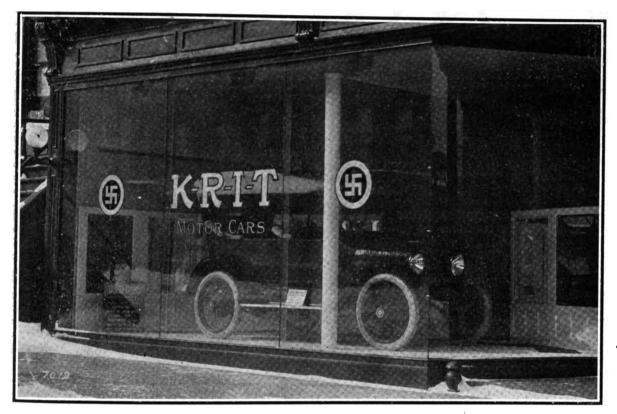
on their behalf and at their request to locate a certain stolen automobile."

Warnes Law Gets Second Knockout

Two courts—the last the Court of Appeals of Ohio—having declared the Warnes law unconstitutional, the Ohio Automobile Association now plans to hurry the case to the Supreme Court and get a final adjudication; this is planned as a matter of form, for the motorists are confident of the outcome. The law imposed a heavy tax on motor car owners and was therefore declared a revenue measure and contrary to the provisions of the constitution.

### WINDOW MADE ATTRACTIVE WITH MIRRORS

How One Dealer Obtained Turntable Effect in a Window Too Small For Turntable—White Floor and Background That Aid in Eliminating Reflections—Display That Reveals Whole Car at a Glance.



BROOKLYN (N. Y.) KRIT DEALER'S "MIRRORED" DISPLAY WHICH TAKES THE PLACE OF TURNTABLE

There are more ways than one to kill a cat; and John P. Agnew, who is the distributer for Eastern New York for Krit cars, has found that there are more ways than one of so displaying an automobile in a show window that very nearly the whole of it is visible at one glance.

Agnew is a Brooklyn (N. Y.) dealer and his place of business is located on Bedford avenue, which is one of the main arteries of automobile travel in that city. Also, Agnew is a bit of a genius, as the appearance of his show window makes plain. Having knowledge of cars displayed on moving turntables, and knowing that such a display was impossible in his own salesroom because of the limited space at his disposal, Agnew proceeded to solve the problem in another way.

Briefly, Agnew has utilized mirrors, which are placed in such a way that all four sides of the single car that forms

the display are revealed at the same time. But there is a great deal more to the window than the mirrors. The whole plan has been carried out skilfully and gives evidence of careful thought.

To begin at the beginning, Agnew built up the floor of the show window with narrow planks to a level with the lower edge of the plate glass; this floor he painted, or had painted, an egg-shell white. At the same time that part of the side walls not composed of mirrors, together with the mirror frames and lower panels, were painted white. Even without the mirrors the effect is in marked contrast to the windows of other shops close by, for the white background tends to eliminate the reflections which make it almost impossible to view the contents of a window which has a dark background.

The mirrors are mounted in frames

which are hinged together so that their angle may be altered slightly to better the display if necessary and also to permit of them being turned back out of the way when the window display is changed.

There are two sets of mirrors arranged in such a way that there is a wide, open space directly at the back of the car. The angle of the mirrors, however, is such that the whole of the car—back and front—is visible from outside the showroom; the opening at the back is not visible except from the inside, where it serves to permit the car on display to be seen by those who enter the sales-room.

A narrow strip of green baize carpet around the car preserves the whiteness of the floor from the muddy shoes of those who step into the window to inspect it and at the same time serves to relieve the expanse of white.



#### **ADOPTING OTHER MAN'S IDEA**

What Succeeds in One Place or Business Generally Will Do So in Another—Real Answer to the "Can't Be Done" Objection.

Nine men out of ten admit the truth of all you say when you tell them about the success achieved by someone else in a special merchandising effort. "But," they promptly add, "it would never work out in my business. My business is peculiar. I have an entirely different class of trade. The people in our city are different. I am afraid to try it." And they go on doing things the same old way.

They do not stop to reflect that though local conditions are different human nature is essentially the same throughout the length and breadth of the land. If it were not so the big magazines would never enjoy national popularity. We all think and act very much alike in the last analysis and the woman in Little Falls, Mont., or Big Beaver, Mich., is just as quick to get hold of the slit skirt the minute it is shown in the local store, as her sister in the big cities.

#### Principles of Success the Same.

The same general principles are back of big business successes everywhere. The system of education is very closely standardized, and so it is possible to go on piling up example after example to prove beyond a doubt that if the fundamental idea back of the plan is right and calculated to appeal to human nature it will work just as well in a small town as in the large city.

Don't be one of those who are afraid to get familiar with a new idea for fear they might employ it. Be the sort of man who welcomes the first sign of a new plan and scan it closely to see how you can use it. A little change in the details and it may be ready to make money for you. When you read of the good ideas of others, read from the standpoint of how you can utilize them.

A show window or salesroom (for in many places they are one and the same thing) is an opportunity. It may spell bread-and-butter or it may be merely one of the fixed expenses of the business. It is up to you. What are you doing to make your show window spell bread-and-butter?

#### TWO WAYS OF LECTURING EVEN AT AUTOMOBILE SHOWS

What a difference it makes the way you tell your selling story! This thought is suggested by the methods of the different men who acted as "lecturers" during the Chicago show.

Some of them talked as if they were paid for it and were in an awful hurry to get through. They did not seem to take much interest except to get so many words off their chest. Others delivered their lecture as if it were the most vital and important thing in the world; they gave their talk with seriousness and dignity that commanded the attention even of the veterans of the trade. They believed in their car-knew its every point and were in a position to explain clearly the reason back of every detail in its construction. They were "sold" themselves and they could not help but convince others.

There is a lot of difference between the professional "spieler" and the man who really knows, and because he knows is full of enthusiasm—and reasons.

#### WINTER MONTHS AS PERIOD FOR IMPRESSING PROSPECTS

Now is a good time to gather the names of new prospects. Each year more cars are being driven all winter, which is a period during which the unevenness of the roads makes the wear and tear of the past season develop in exaggerated form. Every loose bolt and every squeak shows up. It is the time when a chance ride in a tightly built new model offers startling opportunities for comparison. The memory of one ride in a car that is built to hold together as a compact unit is often a more potent argument than yards of talk.

Many dealers do not allow it to be a chance ride—they are busy arranging demonstrations—only they don't call them by that name. One man keeps in mind the men whom he thinks ought to buy a car and, when possible, arranges to call for them to take them to church or lodge or theater just to show them how the model works. Many sales have been landed through this method.

### PRICE-CUTTING MEANEST FORM OF COMPETITION

Of all form of competition price-cutting is the meanest. The dealer who yields to the temptation of trifling, immediate gain makes a mistake. There are, it is true, times when price-cutting is pardonable, but those times are the crucial moments when necessity for immediate cash is greater than necessity for business building—and they do not occur often to the man who conducts his business properly.

Why should you give up part of your profit just because someone else does so? Why not gather all the arguments for getting the right price and get them down in black and white and study them carefully and post every salesman with the right line of defense and attack? The reason so many men fall down when a cut in price is made is that they are not properly armed. Either the goods and the service that goes with them are worth the price or they are not; if not, you should be selling some other line; if they are worth full value, you should get it.



#### SIMPLE THINGS THAT COUNT

Big Ideas and Brilliant Thoughts Subsidiary to Common Sense and Attention to Details—Punctuality and Procrastination.

It's the simple fundamental things that count in business. So much is heard about brilliant ideas and their effect upon trade that we are prone to forget the everlasting fact that it is the simple, obvious, common-sense things that count.

Punctuality, which in its essence is a form of politeness and an advertisement of the fact that you mean what you say, is one of the fundamental virtues that every salesman should cultivate strongly. What matters it, if the one with whom you have the appointment keeps you waiting a half hour when you get there; you have something "on him" that makes him apologetic when you do get in and the chances are that you will get very much more of his time and attention than he might have spared otherwise.

#### Being Late Weakens Position.

It is true that the average salesman is much better at keeping his appointments "on the stroke" than the average buyer. This fact, however, does you no good when you are late and your position is weakened tremendously when you have to apologize. Every salesman who has studied his business knows this, nevertheless there are many otherwise good salesmen who are staying on the rungs of the ladder instead of climbing to the top simply because they are deficient in just 'this one quality.

Hand in hand with lack of punctuality goes procrastination. They are twin devils. They seem so small and insignificant at the beginning as to be unworthy of warfare. But, swiftly and surely they develop into great, strong devils and suddenly we find ourselves in their clutches so firmly that escape seems impossible. There is only one way to escape and that is to fight—to fight hard and with determination and persistence and, lo! we find that these devils are cowards, easily conquered, who flee to the bushes the minute we awaken to their stultifying presence and vigorously throw them off. But they are always skulking around somewhere, ready to appear again if we are not watchful; so if one would keep them continuously in fear he must be strong, determined, watchful, instant in action, punctual.

### MAKING ONE POSTAGE STAMP DO THE WORK OF TWO

Are you making the mails work for you? In other words, does each bill or statement that you send out carry with it some message concerning the cars or supplies you sell?

It takes only a short time to map out several practical circulars that will make dollars for you. Almost any good local printer will be glad to help. Circulars, testimonials, small booklets, single sheet announcements may be included in the mail and will do effective work if you will let them. Outline a plan and carry it through the year. You will find that the cost is exceedingly low—and, if the stuff is good, your investment will pay big dividends.

### THE SUCCESSFUL SALESMAN; ANOTHER VIEW OF HIM

"The further I go into this subject of salesmanship," said a man whose name is well known in the automobile trade, "the more I am convinced that the successful salesman is the one who is always learning—who is studying the man he meets, exchanging views with other salesmen and reading the best books and papers he can get hold of; and there is

one thing I believe every salesman can cultivate to advantage, that is, absolute and uncompromising honesty with his customers.

"If we cannot meet a delivery date I tell a man so, no matter how much we would like to get his business. If our device is not absolutely the best for him I tell him so frankly. The result is people believe in us absolutely. They know they can depend on us. It takes time and it is not easy, but it is worth while.

"After I leave a factory now, I go over my talk and ask myself if in any way I have exaggerated—and I make a mental note of the point, if I have slipped unconsciously, as one may do in his enthusiasm, so I won't do it again."

#### COSTS AND INCONVENIENCES OF CHANGING AGENCIES

"In five years I have changed lines four times, and in no instance did I change because I actually waanted to; there were reasons over which I had little control; and every time I changed lines hoping to make money, I lost it," said a dealer a few days ago. "It has taken me a year to prove that I can be successful with this line, and I have lived with it night and day; and it is going to take another year before I get any real money out of it.

"A dealer like me may change and may convince himself that there are very good reasons for the change; but it takes a long time to convince the customers and line them up for the new stuff. I will stand a great deal before I make a change again."

These observations bring up a very interesting point—the cost of changing lines. It embodies a great many details which are very often not dealt with but which do affect profits in a very definite way.

#### BUILDING WITHIN BUILDING FOR KANSAS CITY SHOW

Forty-Nine Makes of Pleasure Cars and Dozen Brands of Trucks Displayed in Elaborate Stage Setting—The Exhibitors.

That Kansas City which is in Missouri is in the throes of its annual automobile show and it is a bigger show and a more beautiful one than the Kansas City Dealers' Association ever stood sponsor for before. It was opened in Convention Hall on Monday night, 10th inst., and the lights will blaze until Saturday night, 21st inst.

Under the usual bunting "sky," the wares of no fewer than 90 exhibitors are set forth, the list including 44 exhibitors of pleasure cars, of which six are electrics, an even dozen exhibitors of commercial vehicles and 31 exhibitors of accessories. The exhibits include 49 brands of pleasure cars, including one steam car, six electrics and 12 commercials.

The stage setting that has been wrought for the exhibition is the most elaborate that Kansas City dealers ever have attempted. Inside the great hall, trellis work has been built into what is virtually another building draped with colored bunting and bedecked with flowers that give it all the appearance of a summer house. Extending around the hall, a broad balcony holds the accessories. The list of exhibitors is as follows:

Pleasure cars: Auburn Auto Co., Auburn; Bond Motor Co., Maxwell; Bruening Bros. Auto Co., Apperson; Buick Motor Co., Buick; Cartercar Co., Cartercar; Chalmers Motor Co., Chalmers; J. I. Case T. M. Co., Case; Cole Motor Co., Cole; Dey-Embry Motor Co., Pierce-Arrow and Dorris; Franklin Motor Co., Franklin; Ford Motor Co., Ford; Greenlease Motor Co., Cadillac; Hall Bros. & Reeves, Premier and Paige - Detroit; Holcker - Elberg Mfg. Co., Peerless; Hupmobile Sales Co., Hupmobile; Hudson-Latham Motor Co., Haynes; Imperial Motor Co., Imperial; Jackson Motor Co., Jackson; Karshner Motor Co., Speedwell and Stutz; KisselKar Branch. Kissel; Locomobile Co. of Missouri, Locomobile; Mitchell Motor Co., Mitchell; Motor Sales & Service Co., Krit; Moriarty Motor Co., Lozier, Abbott-Detroit and Regal; Missouri and Kansas Auto and Supply Co., King and Monarch; Nordyke & Marmon Co., Marmon; Oakland Motor Co., Oakland; Overland Co., Overland; Oldsmobile Co., of Missouri, Oldsmobile; Packard Kansas City Co.,

Packard; W. A. Paterson Motor Co., Paterson; Rambler Distributing Co., Jeffery; Stafford Motor Co., Stafford; Southwest Motor Co., Reo, Chevrolet and Detroiter; Studebaker Corp. of America, Studebaker; Velie Motor Co., Velie: Winton Motor Co., Winton; Western Motor Co., Pathfinder and Empnre; Stanley Steamer Agency, Stanley.

Anderson Electric Car Co., Detroit; Baker Electric Co., Baker; Bruening Bros. Auto Co., Waverley; Dodge-Robinson Motor Co., Woods; Ohio Electric Vehicle Co., Ohio; Rauch & Lang Car Co., Rauch & Lang.

Commercial vehicles: Buick Motor Co., Buick; General Motors Truck Co., G.M.C. gas and electric; Holcker-Elberg Mfg. Co., Federal; Kelly-Springfield Truck Co., Kelly; KisselKar Branch, Kissel; Locomobile Co. of Missouri, Locomobile; Overland Co., Willys Utility and Garford; Packard Kansas City Co., Packard; Velie Motor Co., Velie; White Motors Co., Wilcox, C. F. Rouze Motor Co., Knox-Martin tractors.

Accessories: Purified Petroleum Products Co.; Autogenous Welding Co.; Dann Oil Cushion Spring Insert Co.; Peerless Emergency Tire; Motor & Machinists Supply Co.; H. W. Johns-Manville Co.; M. & S. Gear Co.; Equipment Co.; Moriarty Auto Supply Co.; Kansas City Auto Supply Co.; Fidelity Oil Co.; Kansas City Battery Co.; E-Z-Rider Shock Absorber; Pimbley Paint & Glass Co.; National Refining Co.; Kansas City Auto School; Elfeld Hardware & Machinists' Supply Co.; Star Brass Works; Warner Mfg. Co.; Sunflower State Oil Co.; Triple Action Spring Co.; Housel Mfg. Co., Indian Refining Co.; Peake Auto Supply Co.; Menzahole Puncture Seal Co.; Western Tire & Rubber Co.; Columbian Steel Tank Co.; Weiss-Bosley Co.; Automatic Tire Rest Co.; Broughton Fireproof Construction

#### Louisville Has "Decorationless" Show.

With 135 cars on view, the seventh annual show of the Louisville (Ky.) Automobile Dealers' Association was opened in the First Regiment Armory on Wednesday night. 11th inst., and after "playing to crowded houses" was brought to a close the following Saturday night. Contrary to the usual practice, practically no attempt was made to embellish the Armory and consequently there was little to detract from the exhibits themselves. Including pleasure cars and trucks and accessories there were 40 exhibitors, the number of different brands of vehicles totaling 28.

#### AMERICAN FLAVOR STRONG IN ANNUAL TORONTO SHOW

Two Buildings for Greatly Enlarged
Exhibition Which Has Outgrown Armouries — Many
American Exhibits.

Exhibition Park, in Toronto, outwardly may not present such an inviting appearance as it does in all the glory of the Canadian autumn when the annual industrial exhibition is in full sway, but in at least two of the great buildings—Transportation Hall and Horticultural Hall—there is warmth and there are lights and music, and last but not least, motor cars. For the ninth annual show of the Toronto (Ont.) Automobile Dealers' Association, was opened on Saturday night, 14th inst., and it will hold the boards for a week.

As always has been the case, there is a noticeable American atmosphere to the show, which for the first time has deserted the Armouries, where previous shows have been held; lack of space required a new location and though Exhibition Park is far in the west end of the city, the trip apparently has not had a bad effect on attendance. Among the exhibitors are the following:

Ford Motor Co., Ford; Packard Motor Car Co., Packard; Maritime Motor Co., Thorneycroft; White Co., White; Motor Agencies, Ltd., Lozier; Hyslop Bros., Ltd., Cadillac; Anderson, Ltd., Reo; Jackson Car Co. of Ontario, Jackson: S. J. Murphy & Co., Haynes; McLaughlin Motor Car Co., McLaughlin-Buick.

#### Memphis Show in Fir Forest.

The fourth annual Memphis (Tenn.) show, which is held this year for the first time under the auspices of the automobile dealers of the Business Men's Club, was opened on Monday night, 16th inst., in the Auditorium, and will remain in full swing until Saturday night, 21st inst. All told there are upward of 200 vehicles, both pleasure and commercial. Among the exhibitors are:

General Motors Truck Co., Moon Motor Car Co., Jerome P. Parker-Harris Co., Memphis Motor Car Co., Memphis Overland Co., McDonald Auto Co., Nolan Bros., H. A. White Auto Co., McBee Engine and Implement Co., Tri-State Chalmers Co., Wright Motor Car Co., Lilly Carriage Co., Buick Co., Ford Motor Co., International Harvester Co., Southern Auto Co., Standard Motor Car Co., Premier Sales Co., Lockwood & Co., W. G. Hirsig Co.; Paige-Detroit Co.

### ACCIDENT MARS PRACTICE ON SANTA MONICA COURSE

Lewis, Fiat Pilot, Disabled in Wreck Which Kills Mechanician and Spectator and Injures Others
—Fast Time in Tryouts.

#### Entries for the Two Races.

Vanderbilt Cun.

Drivers.	Cars.
Harry Grant	Isotta-Fraschini
Spencer Wishart	Mercer
Gil Anderson	Stutz
Edward Pullen	Mercer
Omar Toft	Delage
E. V. Richenbacher	Mason
Barney Oldfield	Mercer
Earle Cooper	Stutz
Frank Verbeck	Fiat
Wm. Carlson	Mason
Frank Goode	Apperson
Ralph De Palma	Mercedes
J. B. Marquis	Sunbeam
Guy Ball	Marmon
Geo. Goerimann	Toursine
Tony Jenette	Alco
- only Jenette	Alco

#### Grand Prize.

Theo. Tetzlaff	Fiat
Spencer Wishart	Mercer
(31) Anderson	. Stutz
Edward Pullen	Mercer
Omar Toft	Delage
Wm. Taylor	Alco
Barney Oldfield	Mercer
Earle Cooper	. Stutz
Huntley L. Gordon	Mercer
Harry Grant Isotta-Fi	aschini
Frank Goode Ar	person
Ralph De Palma	ercedes
J. B. Marquis St	ınbeam
Chas. Muth	farmon
E. V. Richenbacher	Mason
Guy Ball M	[armon
rrank verbeck	Fiat
lony Jenette	. Alco
Wm. Carlson	Mason

With the Vanderbilt Cup and Grand Prize road races two and four days off, respectively, and the entry lists now formally closed, three changes have been made in the line-ups that will face the starter on Saturday morning, 21st inst., and on Monday, the 23rd, on the historic Santa Monica course in California.

Dave Lewis, upon whom many had pinned their faith because of his consistent work with Stutz cars, is out of both races as the result of an accident in practice, and his place is to be taken by E. V. Richenbacher, who will pilot the Mason that Lewis was scheduled to drive in the Vanderbilt, in both races. The other change concerns Wm. Carlson, who was entered to drive a Mason in the Vanderbilt and who has now decided to "double up" and drive in both races. The complete list as it has been revised is shown by the accompanying table.

The accident that put Lewis out of the running occurred on Monday, and

though it has been reported that he will drive, despite the wreck which all but demolished his big Fiat, it seems highly improbable that he will do so. Lewis had been practicing on the course and is credited with several very fast laps. At the time of the accident it is estimated that he was traveling nearly 50 miles an hour around the Soldiers' Home turn, when one of the steering arms on the car snapped, precipitating the car and crew into the crowd that had gathered to watch practice. Both Lewis and his mechanician, E. R. Arnott, were pinned beneath the car and Arnott died later as a result of his injuries. At the time, five

spectators were badly injured, one of

them, Louis G. Smith by name-a Civil

War veteran-so severely that he later

expired. There were three women among

those injured. Lewis was severely in-

That both races will be won in exceptionally fast time there is little reason to doubt, for among the entries there are two of the four men who have won the five great races that have been run over the Santa Monica course. Of them. Tetzlaff probably is best known, for his memorable victory on May 4th, 1912, when he established a new world's record for road racing by finishing at the remarkable rate of 78.72 miles an hour, is not likely soon to be forgotten. For the others who are most in the limelight, little need be said: Grant, who is the only man who ever won the Vanderbilt twice running: De Palma, who has a Vanderbilt scalp hanging to his belt; the veteran Barney; Wishart, Cooper, Anderson, Pullen-they're all well known to those who follow racing with even half an eve.

Just who will draw down the \$3,000 prizes that go to the winner of each event remains for the future to bring forth. But it is certain that some one will pocket some of the Bosch Magneto Co.'s "incidental" prize money for, with the exception of the two Masons, every car is sparked by a Bosch magneto and all except the Sunbeam and half of Wishart's Mercer, which has a double spark system, have Bosch plugs.

The old reliable Fred Wagner will slap the first Vanderbilt starter on the back on Saturday morning at 10 o'clock, and it is expected that before three in the afternoon the winner will have crossed the wire that connects with the Warner electrical timer. Only cars with less than 600 cubic inches piston displacement will be permitted to start in the Vanderbilt, which is to go 35 laps of the 8.4-mile course, or 294.035 miles. The Grand Prize is to be a free-for-all with the distance set at 48 laps or 402.24 miles.

Practice for the two races started in earnest on Friday last, and up to date Barney Oldfield and his cigar and his Mercer are credited with making the fastest lap of the course. Amateur clockers caught Barney in one of his whirls in 6:32, which is at the rate of about 75 miles an hour. Due to a few rough spots in the course which have not yet been smoothed down, higher speed is dangerous and the other drivers have contented themselves with "touring." Wishart and Pullen both have gone around but a few seconds slower than Oldfield, and Cooper and Anderson are credited with having flown around in 6:41 and 6:44, respectively. Grant, with his monster Isotta-Fraschini, was another who "loafed" over the course, his speed being about a mile a minute.

Although Fred Wagner is to officiate at the start of the Vanderbilt, he will not wave the flag at the starting line when the Grand Prize entrants line up or finish; in fact, all the officials are different for both races, and Wagner will act as referee for the Grand Prize. For the Vanderbilt, the officials are as follows: Referee, George Purdy Bullard; Starter, Fred J. Wagner; Assistant Starter, Frank Lowry; Judges, A. B. Daniels, John F. McLain and C. H. Cobb; Clerk of the Course, George Adair; Chief Scorer, E. W. Leslie; Technical Committee, W. E. Bush, Clarence F. Smith and Frank W. Young; A. A. A. Representative, Earle E. Booth.

For the Grand Prize, the officials are as follows: Referee, Fred. J. Wagner; Starter, George Adair; Assistant Starter, Frank Lowry; Judges, Irving W. Hellman, J. C. Skinner and T. E. Klipstein; Clerk of the Course, Murray Page; Chief Scorer, E. W. Leslie; Technical Committee, Frederick R. Hutton.

#### Disbrow and Mulford Both Get Records.

Somewhat belated recognition has been given the efforts of Louis Disbrow, who, on September 29th, 1912, circled the mile dirt track in the State Fair grounds at Detroit, Mich., 50 times in 45 minutes 32 seconds. At the last meeting of the Contest Board of the American Automobile Association, which was held on Wednesday, 11th inst., Disbrow was officially credited with the record, the best previous time being 47:21.65, made by De Palma at the Syracuse (N. Y.) track a year previous. At the same meeting Ralph Mulford's performance with a Mason at Columbus on July 4th, 1913, when he drove 200 miles in 3:21:48, was officially recognized as a record.

### SHOVEL PROVED MIGHTIER THAN MOTOR IN SNOW BANK

Helpful Stranger Supplied Brains and Despairing Driver Did the Digging—Pulled Out With Wheels on Hard Pan.

Almost every driver who has been stalled by deep snow in the streets knows that once out of a hole it is comparatively—note the "comparatively"—easy to keep going. But getting out of the hole is not so easy, as is attested by the fact that when many streets are blocked with snow, as at the present time, one may pass a stalled machine and come back an hour or two later and find it still there.

A lesson was taught to at least one truck driver which, if taught earlier, might have saved a couple of hours helpless wheel-spinning on a busy street crossing. The machine, turning off a comparatively well traveled road into a side street, lost headway and stopped, when the usual efforts to get started proved unavailing and the wheels dug themselves four nice slots in the snow, the rear wheels resting on the asphalt.

About the time the driver was figuring on calling up the garage and asking for help an old man who had watched part of the performance put in a word.

"Say, young feller!" he said. "If you'll do what I tell you I'll get you out in ten minutes."

"Whaddye want us to do?" enquired the driver, suspiciously.

"Will you do it?"

"Guess so. Let's hear what you've got."

"Well, dig the snow away till you get down as deep as the wheels. You're scared to use the shovel. Dig into it! Go on an' try it."

Half-heartedly the driver started in and dug down to where the snow was hard—and stopped.

."That won't do no good. Go on down to the road," commented the elderly gentleman.

"Oh, hell!" ejaculated the driver; but he went on digging. He dug, under the directions of the volunteer, until there was a clean path, right down to the asphalt, from the rear wheels to the front wheels; the latter, when the job was finished, rested on the snow actually above the road level.

"Now go ahead!" ordered the "boss."

The driver got to his seat, engaged his low gear, started—and kept on going. But as he went rapidly down the

street—he dared not stop—he waved his thanks to the old man, who grinned.

"Most of them don't know they're alive," was his comment, as he went his way.

New York Dealers Elect Directors.

Fifty New York City dealers and several guests assembled last evening, 18th inst., at the annual meeting and dinner of the Automobile Dealers' Association at Louis Martin's; among the guests were Secretary of State Mitchell May, Horace A. Bonnell, of the Automobile Chamber of Commerce, and Herbert L. Carpenter, president of the Brooklyn Motor Vehicle Dealers' Association.

Officers are not chosen at the annual meeting but will be elected next month by the board of directors, to which body the following were elected to serve one year: M. J. Budlong, Packard; C. M. Brown, Winton; Frank Eveland, Stevens-Duryea; R. H. Johnston, White; John F. Plummer, Locomobile; Sidney B. Bowman, Oakland; William Parkinson, Stutz; C. H. Larson, Oldsmobile; H. L. Stratton, Cole, and William C. Poertner, National. They will meet next month to elect officers.

The present officers of the association are Arthur M. Day, president; C. H. Larson, vice-president; Frank Eveland, secretary and treasurer, and Charles A. Stewart, general manager. When officers are chosen, a new president will be elected, as Day recently retired from the automobile industry.

#### Turntable in Window Wins Attention.

Recognizing the value of motion in a window display, the New York branch of the Buick Motor Co. has installed a turntable with which it shows to passing New Yorkers all sides and angles of Buick cars; at present a "six" is on exhibition, along with a trophy or two won in tours.

The table is mounted on a small-diameter track on the floor and is driven by an electric motor in the basement; the motor is belt connected to a shaft which extends up through the floor, the upper end of the shaft being belt-connected to the turntable. The display keeps a crowd always at the window.

#### Ex-Subdealer Wants His Deposit Back.

John Razor, of Bloomington, Ill., has filed suit in the Circuit Court in that city against the Cadillac Automobile Co. of Illinois for \$5,000; he claims the company took the Cadillac agency away from him without giving him 30 days' notice of the dissolution of the contract and has failed to refund his deposit.

### WHAT! NOBODY LOVES FAT MAN? DON'T BELIEVE IT!

Here's a Company That Seeks Fat Salesmen—Bars Out the Lean Man—Says "Big Fellows" Make More Sales.

"Nobody loves a fat man" has been exploded! Not only has the reverse been proved, but the love is so great on the part of a firm of London publishers that they actually are advertising for salesmen who are fat; the company is willing to pay the salesman good money provided his waist measurement comes up to standard, and the thin, lean man is barred out absolutely.

"Wanted—Big fat men as travelers; tall preferred, to call on professional men in connection with good lines. Thin people need not apply. Reply, giving full particulars to ——."

This was the advertisement which appeared recently in a London newspaper and which caused a decided bull movement in the fat men's stock; inquiry at the office of the advertiser disclosed the fact that the fat men are to be employed in all English-speaking parts of the world, and what the company thinks of fat salesmen in general was explained by one of the officials.

"We employ a great many travelers in the United Kingdom and all over the English-speaking globe," he said. "They all return to headquarters at intervals to discuss business and give an account of their work. A certain group of men, after some time, began to present themselves as obviously the best canvassers in our employ. The funny thing was that we felt vaguely that all these men had some common characteristic which we never could quite place. We were first disposed to believe they had a greater inherent ability as salesmen; but we now have decided that this is not exactly the case.

"By chance a short time ago several of them appeared together in the manager's room, and the truth leaped at us. They were all strong, stock, stout men. The conviction has been forced on us that their comfortable build has had a good deal to do with their success.

"Buyers suspect thin men with a pushing and over-clever look; they think the masterpieces of literature they offer will be thin, too; whereas a stout man gives an honest, sturdy apeparance, and they feel that this genial man carries good, sound books in keeping with his natural frame."

### "DO UNTO OTHERS"-INCLUDING THE SALESMAN

## Old Timer Gets a Hearing at Reilly's After a Long Morning of "Don't Want Anything Today"—Men Who Say They Don't Want What They Haven't Seen—Inconsistent Purchasing Agents.

Mike Caddell, energetic in the service of the Ente Office Appliance Co., emerged from a salesroom on Automobile Row with determination expressed in an extra undershot appearance about the lower jaw; when his feet touched the sidewalk he said—to himself, of course—"I'm going to tell somebody about this filing system in the next place I stop, if I have to rope him into a chair to do it."

#### Looking for a Man Who Will Listen.

But the filing system man lied—to himself, of course—for the next place he entered was the salesroom of a dealer who, as the office girl said, was "pretty near out all the time," and Caddell couldn't see much use trying to sell a filing system to the blonde typewriter chauffeur.

"But it goes for the next place," again mentally asserted Caddell, and he stopped an instant to pick out a victim. "This Reilly guy looks good to me," and the filing system man began to move across the street and at the same time to speculate as to how he was going to make good on his mental promise in case the would-be victim refused to listen or be roped.

#### Reilly Proves a Willing Prospect.

however, able salesman though he was, nearly had an attack of buck fever when he found he needed no battering ram to insert his entering wedge and needed no rope to get an audience; "this guy Reilly" was very submissive and seemed quite willing to listen to what Caddell had to say about the filing system; he even seemed interested. And even after Reilly had said he didn't think he wanted to install the new system at that time but would like to keep Caddell's card for future reference-for the system really looked good -Caddell still felt a trace of the buck ague, it had been so much less difficult than he had anticipated.

"Mr. Reilly," he said, "I want to send you a little souvenir which our factory gets out." Caddell noted the name and address. "I want to send it for two reasons; one is that I want to help you

to remember that we are on earth, and the other is that you are the first man in the last hour who would so much as listen to what I had to say."

"Having a hard morning?" laughed Reilly.



"THEY ALL SAID, 'NO, WE DON'T WANT ANYTHING TODAY"

"Hard! No name for it! I've been in a half-dozen different places, and every time I got the same old story, 'No, we don't want anything today.' I had about made up my mind to tie somebody with a rope and make him listen to me, just



"BUSY BUSINESS MEN? BUSY—BUT NOT BUSINESS MEN!"

for the sake of getting a chance to talk to someone about the Ente filing system. Even if you haven't seen fit to use the system I am grateful to you for having given me a chance to talk to you."

"Doesn't the system take?" inquired Reilly.

"Take!" exclaimed Caddell. "Take! It

takes with those who use it, and everyone who understands it is favorably inclined toward it; I believe you'll admit that much."

"It looks pretty good," admitted the dealer.

"It isn't that the system is no good," continued Caddell, "but that these half dozen people I called on in the last hour wouldn't even look at it. They all said 'No, we don't want anything today,' and they don't even know what I'm selling."

Reilly laughed. "Busy business men, eh?"

#### "Don't Want Anything Today" Bugbear.

"Busy—but not business men!" replied Caddell, who set his sample case on the floor and sat down on the edge of a chair in a going-to-go-in-a-minute posture. "Let me tell you, Mr. Reilly, what I find in beating around the country with this outfit; I haven't been able to come to a decision in my own mind as to just what the trouble is, but something is wrong either with me as a salesman or with the business men as business men. This 'don't want anything today' is the bugbear of my calling.

"I don't look as old as I am, but I've been selling goods for 20 years and, if I do say it myself, I consider that I have made good as a salesman. I've sold wholesale and retail in several different fields, and at this period of my service I am prone to wonder whether this business man who is too busy at least to see what a salesman is selling isn't less efficient in his own interests than he might be."

#### Purchasing Agents Uninterested.

"There's something in that."

"So it seems to me," continued Caddell. "When I handled a line of material for factory use I was up against the purchasing agent proposition, and from the way some of them do business I am led to wonder why they exist. Time after time I have gone to a factory and sent my card in to the purchasing agent, only to get that same old answer, 'No, we don't want anything today.' What I can't understand is how he knows whether he wants what I'm selling until he knows

what it is, what it will do and how it can be applied to advantage in his business.

"If I were running a manufacturing business or any other organization of a size sufficient to demand the services of a purchasing agent I would expect that man to be the eyes and ears of my business in his line; I would expect him to know what was being done, what improvements were being made in stuff that we used, what new things were being brought out and whether we could use any of those things to advantage.

#### Caddell's Idea of Buyer's Duties.

"If he ran across something which seemed to require a more thorough or technical knowledge than he possessed I would expect my purchasing agent to submit the case to the engineers or some other competent persons and get a real opinion; I wouldn't expect that every new thing or improved method would be purchased right away quick, but I at least would want the organization to know about it so we would know where we were at if the time ever came when we wanted to spend money in that direction. That's what I would want my purchasing agent to do, and"-Caddell thumped the desk with his fist-"that's what he would do, too!

"So many of these purchasing agents don't seem to be any more than order clerks; if the company wants anything they dictate a letter and make out the order. It is to be assumed that a purchasing agent is not always going to have the authority to buy without being told by the factory officials what to buy, but if he is to be a mere order clerk he can be hired for less money than a lot of them are getting. Why, Mr. Reilly," and Caddell became real earnest, "I think the man who buys is passing up one of the greatest opportunities when he doesn't investigate things and make himself an authority on materials and purchasing!"

#### Finds Same Situation Among Dealers.

"That is more or less my opinion," was Reilly's frank admission.

"And now," continued the office appliance man, "I'm in the retail end of the business and I find something of the same sort here. There are a lot of little things that retailers, such as you automobile dealers, could learn by listening to a salesman now and then."

"I seldom refuse to see one," replied Reilly.

"Listen to them all?"

"I always plan to find out what a man is selling, at least," replied Reilly. "What

you said about purchasing agents gathering information on materials and so forth is a part of the idea that has prompted me to do this. I consider that unless I absolutely have not the time to listen that I can gain something by hearing what a man has to say. Some of



"HOW CAN HE KNOW WHEN HE DOES-N'T KNOW WHAT IT IS?"

them can show their sample and tell their story in about six words and don't take up much time, but 1 always like to know what a man's got to sell. Maybe it's just a little bump of curiosity on my part."

#### Why Salesmen Should Have a Hearing.

"It's a commendable curiosity, to my way of thinking."

"Well," slowly responded Reilly, "I think it is a proper ambition in a man to want to keep up-to-date in his business methods. It is true that there are



REILLY COULD ALMOST HEAR CADDELL SAY, "NO! BEAT IT!"

dealers along the Row who don't seem to care to know any more about business and selling than they know now—maybe you struck some of them this morning—but as a whole the dealers are quite aggressive.

"Take the typewriter, for instance. Before such a machine was known men didn't know they wanted them, and it

was because they had never heard of them. Now who could get along without one?"

"That's right! That's right!" interrupted Caddell.

"Of course, a man isn't going to go busted and lose his business just because he doesn't listen to every salesman who comes in, and I suppose some of the biggest and best men in business never did it, but I believe I can see advantages in it that are not to be overlooked.

"Another thing I can't exactly understand is why every salesman has about this same idea on getting a chance to tell his story, yet when a salesman is the buyer he promptly brings out the 'Don't want anything today' story, never thinking how many times he has condemned it himself.

#### Reversing Tables Alters Situation.

"Furthermore, how would a manufacturer feel if his own salesmen were given such treatment? Would he like it? Would he even stop to remember that he might be giving other companies' salesmen the treatment to which he objected when the tables were reversed?"

"That's it, exactly!" said Caddell. "That's human nature, I suppose. 'Do as I say, not as I do,' is a very fine motto and is much more popular than 'Practice what you preach.'"

Reilly and Caddell walked to the door. Caddell went on down the street, his case in his hand. At the corner he set down his grip to light a cigar, and as he did so a little, thin-faced man unfolded the prospectus of a book and Reilly could almost hear Caddell say, "No! Beat it!" as he brushed the man aside.

"Oh, well," mused Reilly. "Book agents are excluded. Nobody can afford to listen to those fellows."

#### Fender Law Fails in Milwaukee.

Although ordinances requiring fenders on motor trucks have been passed in Detroit and Chicago and a pretense made of carrying out the law in Detroit, Milwaukee has declined to make such a measure into law; the bill might have been passed but for the strenuous opposition of the truck operators of that city. and it was largely through the efforts of the Stegeman Motor Truck Co. of that city, that the legislation was killed. The Stegeman people circularized every owner of a motor truck and also delved into statistics. It was shown that only 10 per cent. of the motor accidents were caused by motor trucks and that in all cases these injuries were caused by falling between the front and rear wheels. so a fender would have been useless.

#### MOTOR WORLD

#### COUPE AND SEDAN ADDED TO STEARNS-KNIGHT LINE

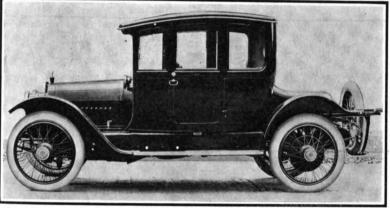
First Inside-Driven Closed Cars Distinguished by Unusually Roomy Interiors—Both Bodies on Four and Six-Cylinder Chassis.

By way of completing the roundingout process made apparent by the quite recent addition of four- and six-passenger open touring bodies, the F. P. Stearns Co., of Cleveland, O., now has same sloping hood and cowl that all the Stearns-Knight cars have in common. For obvious reasons, the sedan model embodies a much longer sweep from the hood to the windshield than does the coupe, though otherwise the lines are much the same.

The coupe body, as is made plain by the accompanying picture, is placed well forward on the chassis, thus providing for a commodious storage compartment beneath the after deck. By way of leaving the operator plenty of elbow room, the seats have been placed in echelon, which is an army term meaning that up against the side of the car when not in use. Needless to add, both bodies show the usual Stearns-Knight lavishness in appointments and richness of fittings and finish and trimming.

As already has been made plain, the chassis in both cases is standard throughout and differs not at all from its predecessors. The general arrangement of control levers, instruments, etc., is the same on the new cars as it is on the older models. In the four-cylinder type, both the coupe and the sedan have wheelbases of 121 inches; the six-cylinder wheelbase is 134 inches.

Except for a difference in the size of parts commensurate with the power developed by the four- and six-cylinder motors, the two chassis are practically identical. The "four" has a motor measuring  $4\frac{1}{4} \times 5\frac{1}{2}$  inches and the "six" dimensions are  $4\frac{1}{4} \times 5\frac{3}{4}$  inches. Both have dry disk clutches, and full-floating axles with bevel drive, though worm drive is supplied at slight additional cost. In the "four" the gearset provides three speeds and in the "six" there is a four-speed gearset.



WIRE WHEEL EQUIPPED STEARNS-KNIGHT COUPE MODEL

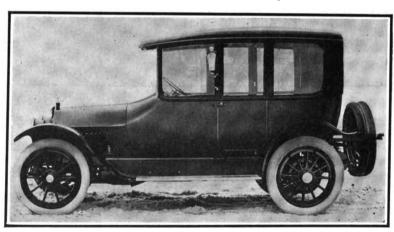
added both coupe and sedan models to its already complete line; both types are brand new, the Stearns company never having produced inside-driven closed cars before, and both may be fitted to either the four- or six-cylinder standard Stearns-Knight chassis.

Adding these two new models to the line brings the total number of different models up to nine on each chassis, or 18 in all. When the original Stearns-Knight was placed on the market for the season of 1912, the line included but five models, all built upon the four-cylinder chassis; they included standard touring, small tonneau touring, roadster, limousine and landaulet. In the following year the assortment was made more complete by the addition of not only a light four-passenger touring body and a seven-passenger car, but a six-cylinder chassis as well, making no fewer than 14 different models.

As might have been expected in view of the regular and consistent appearance of all the Stearns-Knight features that first served to distinguish the brand, the addition of the two new body styles presages no mechanical alteration in the chassis. Similarly, most of the original body lines remain intact. Thus, for instance, both coupe and sedan feature the

they are slightly staggered. Thus the driver has plenty of room, he occupies the most advantageous driving position Truing the Connecting Rod Big End.

After a connecting rod big end has been refitted or rebushed there is a possibility that it may be out of true and not exactly at right angles to the crankshaft. It should therefore be tested. The piston should be in place, the crank turned to its lowest position and the rod and



STEARNS-KNIGHT SEDAN MODEL ON FOUR-CYLINDER CHASSIS

and the other occupants are not crowded. The seat in the front of the body may be folded up quite out of the way when not in use.

The construction of the sedan body is different, of course, as the body is considerably longer than the coupe and accommodates five passengers. All the seats face forward, one of them folding

piston placed upright; the bearings should be just stiff enough to hold them up. A square applied to the crankshaft and the piston will tell the story. As some pistons are tapered, however, the square should be tried on both sides. There should be an equal clearance on both sides if there is a taper or if the square is not perfectly true.

#### LAMPS TAKE NEW SHAPES UNDER ELECTRIC REGIME

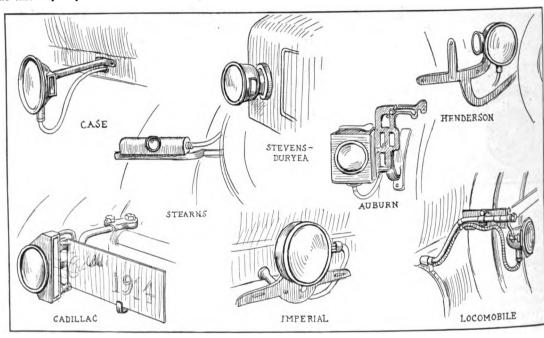
Variety Disclosed by Study of Tail Lights and Supports on Some of the Newer Cars—Illuminating License Plates.

The styles in tail lamps have changed; the difference in the shapes and in the method of mounting the little glowers that make conspicuous rear license plates after the shades of night have fallen and that warn the drivers of overtaking cars that they may avoid rear-end colproducing good lamps. But other carmakers have preferred to design their own lamps, in some cases to obtain merely that little touch of difference that adds to the air of exclusiveness.

Thus, for instance, some of the new lamps have plain glass before the tungsten bulb, and some have plain lenses, and some, like the Locomobile, for example, have what in nautical parlance is known as a Fresnel lens. The Fresnel lens, by the way, is named after a French physicist who developed it originally for light house work, the requirement being that the beams from the lantern be projected in parallel lines for a great distance. Now, however, it is

by the illustration. At the side there is a long rectangular section of white glass which permits the bulb to illuminate the license plate. The bracket is made to hold both lamp and plate.

The Imperial has a still different method of illuminating the license plate, which in this case is carried below the lamp. The lamp itself is round and there is a white glass at the bottom, so that the light rays can shine on the number. The whole bracket is one piece and fastens directly to the body. The Case bracket also fastens to the body, though the arrangement is quite different. Here the lamp stands at the end of a fairly long bracket fastened to the body.



DIVERSITY IN ELECTRIC TAIL LAMPS AND LICENSE BRACKET EQUIPMENT

lisions, was quite noticeable at the recent national shows in New York and Chicago. The more or less bulky oil tail lamp with its uncomfortable failure at inconvenient times has almost entirely disappeared, and in seven or nine cars out of ten its place has been taken by a very much smaller—and, be it added, much more brilliant—electric lamp.

All of which was to be expected, of course; for the use of electricity for lighting spells convenience and the electric tail lamp probably is one of the greatest conveniences that distinguish latter day ears from their predecessors. Nor are all electric tail lamps alike; a good many of them are alike for the sufficient reason that they come from the same lamp makers—makers who have devoted their time and their energy to

used for many purposes, not the least important of which is in the humble tail lamp. The picture of the Locomobile lamp, by the way, shows how substantially it is mounted; that it is attached to the tire carrier and the tank support.

The Locomobile is not the only one that uses the Fresnel lens, though the majority of makers prefer either plain glass or the plain lens. Most electric tail lamps are round, though in a few cases they are rectangular. The Auburn, for instance, is one of the few that uses a square lamp, the picture showing its general shape and illuminating the fact that it is attached to a bracket which serves also to hold the license plates. The Cadillac lamp has a round lens, though the body is a rather odd shape, for which the reason is made apparent

In the Stevens-Duryea arrangement there is no bracket at all, strictly speaking, for the lamp attaches directly to the body, even the wiring being concealed. The license plate, of course, also attaches to the body and is illuminated through a little white window. The Stearns-Knight lamp and bracket is among the comparatively few that are mounted on the mudguard instead of on the body. The lamp is what is styled a "worm," because of its elongated shape. and there are means to attach the number plate beneath it. The Henderson arrangement differs from all of the others in that there are two lensse, one with a red glass and the other, to illusnimate the number plate, with a white one. The bracket is intended to support both the lamp and the number plate.

### WHY COOPERATIVE BODIES FAIL TO "CO-OP"

# Moral That May Be Drawn from Unsuccessful Venture of Mount Vernon Dealers and Garagemen—Organization of High Ideals Fell Apart in Its Beginning—One Tradesman Suggests the Reasons.

Died—Mount Vernon Automobile Garage & Dealers' Association; along about January 1, 1913; age, a couple of months. Survived by one long name, nine ideals and numerous unpleasant recollections

Seeing that the floral wreaths had by now been dropped into the ash can and the memory of the infant become merged in the mists of the past, a Motor World man went up to Mount Vernon, N. Y., this week to get the details of the funeral; he had been present in the happy days immediately following the birth of the child, as is attested by a story in Motor World of November 28, 1912.

#### Members Had High Hopes of Plan.

Aside from what was said at that time, it may now be stated that the infant was both sired and dammed by 16 dealers and garagemen of Mount Vernon; at present it is damned by nearly all of the 16. It started out to be a cooperative association, destined to revolutionize the automobile trade in that town, and it looked fine on paper; the 16 memoers believed they had evolved a great cooperative idea and some of them think so yet; it was fine, too, with the exception that it wouldn't "co-op."

The failure of the plan did not create an undue ripple in the trade as a whole, for the town itself boasts a population of but 35,000, but from the fact that similarly constructed cooperative movements have fallen flat in other places, the whys and wherefores of this failure may prove of interest. Why cooperative schemes don't pan out is and has been a puzzle to many men, and it has proved puzzling even to the members of such associations. But from what the Mount Vernon men say, the failures of cooperation are due largely to the fact that men are still very, very human and can't get over the idea that every man is in business for himself.

#### Evils Which Gave Association Birth.

Furthermore, any group of dealers which is seriously considering launching a cooperative association can get valuable data from any Mount Vernon tradesman; data is one of the principal remaining assets of the organization.

The organization grew out of conditions which existed in the trade, and which exist today to a certain extent. Price-cutting and bad debts were one of the evils the movement was planned to remedy; chauffeurs' commissions was another, and the failure of some of the garages to make the money they should have made was yet another. These were the things that inspired the thought, but as the plan grew it assumed extreme cooperative features, and when fully developed covered these points:

#### What the "Cooperators" Planned to Do.

- 1. Cooperative buying.
- 2. Account adjusting committee.
- 3. Committee to assist embarrassed members.
  - 4. Storage schedules.
  - 5. Uniform gasolene price.
- 6. Compelling purchases of supplies at garages.
- 7. Prompt payment of bills.
- 8. Uniform wages to employes.
- 9. No commissions to chauffeurs.

Those were the nine ideals. By buying a large quantity of goods from one company it was planned to get a better rate, the goods being divided among the garages after their arrival in Mount Vernon. The Account Adjusting Committee was to arbitrate disputes between garagemen and customers.

#### Big Brother Element One Feature.

The Committee to Assist Embarrassed Members aimed to examine the business and methods of any man who was not making money and help him get onto his feet. By uniform storage rates, pricecutting in this feature of the business was to be eliminated, and with 22-cent "gas" everywhere in town everyone would be on an equal basis.

Making the garage customer buy his supplies where he stored his car is being done without the association; it was planned, however, to make the car owner pay his bill within 15 days after it was rendered and in the event of failure he would go on the "bla:k list" or be visited by the Accoun Adjusting Com-

mittee. It was expected that uniform wages to employes would tend to make men steadier workers, and as to chauffeurs' commissions little need be said.

What actually happened, as told by a former member and promoter of the plan, was that the organization bylaws hardly had been signed before the organization began to fall apart; few members attended the few meetings that were held, and when an association officer found a member cutting "gas" two cents a gallon "right under his nose" the end drew near.

Joseph Weil, who operates a supply store at 15 Prospect avenue, probably reflects the attitude of several others who failed to stand by the organization; Weil, however, never really became a member, for while negotiations were still on the scheme began to wane.

#### Wasn't Practical, Says a Supplyman.

"Yes, it busted," said Weil, when the Motor World man asked him about the association. "It couldn't work; it wasn't practical. They came to me and wanted me to join. Bad accounts was the thing that started the association; it was proposed to keep track of the standing of different car owners. If a car owner went, for instance, to the Mount Vernon Auto Station, ran up a bill and failed to pay it, the word would be passed around to all the members that that man was no good, to watch out for him.

"That was all very well. Then it was proposed to fix a price of 22 cents for gasolene. To that I said, 'No, no; what I charge for gasolene is my own business. If I want to sell for more or less than the others I don't see that you have any right to interfere.' I can run my business without any outside help in that respect. We dickered along and finally it was agreed that I was to sell for 21 cents and the rest of the association for 22 cents.

#### Looked Good but "Couldn't Be Done."

"Then they said they were going to buy oil by the carload and dry cells in 50barrel lots, and other things in similar quantities; that didn't appeal to me. Of course, we might get a better price, but



I couldn't see how it could be done; there aren't many men in town in a position to buy and pay for such quantities, and the association itself had no funds. I proposed that everybody advance \$200 and put it in a bank to the account of the association, so that we would have something to stand on; then, if anyone dropped out he stood to lose what he had put in and it would give the organization some authority. But they couldn't see that at all.

#### Motives of Association Selfish.

"The way I looked at it—and some others, too—the motives of the association were selfish. It was going to benefit a few more than the many; also, some of the things that were incorporated were not going to do a successful man any good. If I can do a good business here, of what value to me is a failing business committee and such things as that? I have been in business here four years and have built up a good little trade without any association."

That is Weil's view regarding cooperation. He, it is true, is a supplyman and, of course, did not have so much in common as did those who run garages; it, however, doesn't require much imagination to see what happened in the case of the member who "cut on gas." It is to be assumed that the rule in business is more or less every man for himself; this may not be idealistic, vet it does prevail to some extent. Therefore, if a man can take a little business away from a competitor by shading prices a little he often does so; the "price-cutter" doesn't stand any too well in business circles today, but he stands just the same. If the man who "cut on gas" had no scruples as to cutting and didn't think any too much of the association anyway, what was more natural than that he should grab what business he could, association or no association?

#### One Reason for the Failure.

He undoubtedly reasoned thus: "If I stick by the association someone else will 'put something over on me,' and I guess the best thing for me to do is to get what I can while I can." Anyway, that's what a few of them did and, like sheep, when one jumped they all jumped and that was the end of the association. It had been weeks in organizing, but it died overnight.

To some of the members the laws of the association seemed like a barrier to business; had every member adhered religiously to the plan it doubtless could have demonstrated its benefits in many respects. It might not have been possible to finance cooperative buying, but some of the other ideas might have worked out. The trouble was they didn't hang together. Maybe Weil's statement that "they were too selfish" has something to do with it, and it is not impossible that the members would rather run their own businesses in their own way without any restrictions.

Some of the garages have incorporated some of the association principles in their business methods; for instance, as one garageman said, "We don't give chauffeurs commissions and we insist that the man who stores his car with us buy his gasolene and supplies of us. The payment of bills and wages and the other matters we handle in our own way." The man who said this seemed satisfied with the arrangement, yet, strange to say, he was once a strong booster for the association.

#### "Gas" Price Falls in Middle West.

Although the reductions have not yet reached the East, gasolene prices in the Middle West have undergone several reductions during past months, the latest being a cut from 14 to 13½ cents a gallon; it applies apparently to Illinois, Indiana, Michigan and Wisconsin and the adjacent section, and is said to be due to competition between the Standard Oil Co. of Indiana and the Waters-Pierce company for business in that territory. Dispatches from St. Louis state that it is the fourth cut since November 14.

Standard Oil of Indiana officials, in Chicago, asserted that the reduction was not confined to the Middle West, but "gas" this week was still 16 cents in New York. In Milwaukee the tank wagon price was made 14 cents February 11 for 60 test and 16 cents for 65 test, which is approximately the test of common motor gasolene generally dispensed. In Milwaukee this is the second half-cent cut that has been made in less than a month.

#### Owes \$32,000 for Rental of Taxicabs.

Partly because the ordinance passed last summer by the City of New York cut into the profits of some of the taxicab companies, the Renault Taxi Service was this week made the judgment debtor to the Motor Taximeter Cab Co. for \$32,592.18; this judgment was filed in the New York county clerk's office.

The cab company originally ran its own cabs—about 75 in number—but later turned their operation over to the Renault Taxi Service at a rental of \$75 per car per month; the Renault, however, fell behind in payments and May 9, 1913, the Cab company cancelled the con-

tract, took back the operation of the cabs and sued for the accrued rentals. The recently completed accounting fixed the judgment at the amount named.

#### Standard Oil and Texas Have Dispute.

The Standard Oil Co. and the Texas Co. are having a bit of trouble over a trade-mark; the Standard company has applied for registration of a star as a trade-mark and the Texas company is opposing it on the grounds that it uses such a mark in its own business.

In the patent office at Washington the Texas Co. has entered opposition to the Standard's proposed mark and examinations have been held, one phase of which led to action in the Federal court in New York City. This was to compel Harry Tipper, the Texas advertising manager, to produce certain letters and answer a question.

The question referred to the taking over by the Texas Co. some time ago of Mathers Bros., an oil concern, which had registered as a trade-mark a star in a triangle. The Standard company sought to learn whether this trade-mark was not valueless at the time it was taken over and asked that Tipper produce letters regarding the transfer, which he refused at first to do.

#### No More Studebaker "Four" Landaux.

Studebaker dealers have been notified that the factory has entirely finished its run of "four" landau-roadsters and can accept no more orders, due to centralization on touring car production. This model was of the convertible type. The fact that it has been entirely sold out is due largely, it is stated, to the remarkable appeal which it made to physicians all over the country. Similar announcement is likely regarding the landau-roadster body furnished on the Studebaker "six," of which only a limited supply remains.

#### Gregg Gets Option on Penn Plant.

E. B. Gregg, former sales manager of the defunct Penn Motor Car Co., of New Castle, Pa., has obtained a 30-day option on the plant and has a buyer for it in prospect. The factory has been idle for a year or more, or since the company for a second time "went broke."

#### Winsor Takes Clarke as Partner.

S. A. Winsor, of Detroit, has sold an interest in his factory sales agency business to William J. Clarke, the style of the business becoming the Winsor-Clarke Co. It will be continued at 965 Woodward avenue, Detroit, instead of at 67 Atwater street, east, as heretofore.

### RECENT DEVELOPMENTS in ACCESSORIES

#### Another Starter for Ford Cars.

The actual exertion required to start a small motor, such as that of the Ford car, really is trifling; it isn't at all like spinning a 4½ x 6 engine. So in a little car the hand-cranking business is objectionable chiefly because it is rather a nuisance—one has to get out in the mud or the dust, sometimes, and all that sort of thing.

Therefore the Perfection Auto Starter Co., of 1551 Broadway, New York, is of the opinion that a mechanical starter that works from the seat is exactly what is needed on a Ford, for not only does it eliminate what is most unpleasant, but it is not what could be termed an extravagantly expensive luxury. The Perfection starter, which is shown as applied to a Ford in the accompanying illustration, consists of a ratchet shaftturning device which takes the place of the eliminated crank and is actuated by a foot lever through a connecting rod and a chain running over guide sheaves. The lever, when not in use, is locked in an out-of-the-way position by a toe clamp. The whole apparatus can be attached, the makers state, by anyone, the parts bolting to the car without in any way defacing it-in fact, the claim is made that it rather improves the appearance of a machine by giving it that "crankless" look that indicates a starter. The Perfection starter weighs, complete, 25 pounds and the price is \$25, installed.

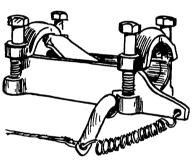
#### Muffler Cut-Out that's Uncommon.

While it is quite the usual thing for a muffler cut-out to provide an opening which permits a free passage for the exhaust gases, allowing them to escape partly through the muffler, it is decidedly out of the ordinary for a cut-out to force the gases to flow through the auxiliary opening, as is done by the "XL" muffler cut-out shown in the accompanying illustration, which is made by the Auto Improvements Co., of Bristol, R. I.

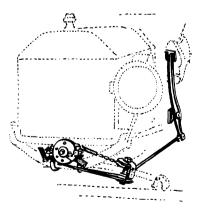
A flap valve at the bottom of the cutout covers the port when closed. By means of a cable leading to where the driver can reach it conveniently, the flap or tongue can be raised so that while it uncovers the port, it obstructs the pipe leading to the muffler, so that the exhaust is deflected straight out through the big opening. One of the advantages claimed for the arrangement is that the



HACKNEY ROLLER PEDAL



"XL" MUFFLER CUT-OUT



PERFECTION FORD STARTER

exhaust makes a sharper "bark" than when part of it passes through the muffler. Either hand or foot control can be fitted. The cut-out shown is especially designed for Ford cars, and while at the present time this is the only type made, others will shortly be placed on the market. The price of the Ford cutout is \$3.

#### Here's the Roller Bearing Pedal.

The manufacture of a new type of accelerator pedal is the object of the Roller Bearing Foot Pedal Co., Hackney Building, St. Paul, Minn., which recently was organized by Leslie S. Hackney, who is best known as the inventor of the Hackney motor plow and other agricultural apparatus and who is owner and president of the concern.

The roller bearing pedal is one of those simple things that so often prove to be of no little practical value. Essentially, it consists, as the accompanying illustration shows, of an accelerator pedal in which there are wide rollers upon which the driver's foot rests, instead of the usual solid pad. The rollers permit the pedal to move freely on the sole of the shoe, so that there is no friction to interfere with a smooth, even opening or closing of the throttle and to increase the strain on the foot when driving on the accelerator. Not only is the action of the pedal easy and steady, but it can be operated with rapidity in case of emergency because of the minimizing of friction. The price of the pedal is \$3.50.

#### Exhaust Horn Affording Four Tones.

So far as mere noise is concerned, an automobile horn with a single tone will make quite as much of an uproar as if it had a whole lot of throats; but when several tones are properly blended, the effect is considerably more agreeable to people with musical sensibilities. Which is one of the reasons why the "Red Devil" four-tone exhaust horn, made by the Standard Motor Parts Co., of 1200 Chestnut street, Philadelphia, Pa., which is shown in the accompanying illustration, carries an appeal that is well backed by its price, which is \$4.

As the illustration shows quite clearly, the device consists of four "pipes," the necessary connection for attachment to the end of the exhaust pipe of the car, and the valve for admitting the gases to the pipes. The horn is made in three

finishes-black, nickel and bronze-and in two sizes in addition to the smallest; the larger sizes cost \$5 and \$6, respectively.

#### Making Ford Valve Grinding Easier.

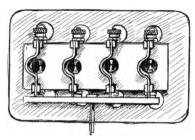
Valve grinding always has been one of the disagreeable incidents in the care of an automobile, and it is no cause at all for surprise that manufacturers of things that tend to make life easier for those who have to keep cars in good condition should have turned their attention to the production of devices for taking the "grind" out of valve fitting. And, going a little further along the same line, it is quite natural that special attention should be claimed by the thousands of Ford cars that have to have their valves fixed up once in a while. Which is as much as to say that F. C. Crone, of 336 Genesee street, Buffalo, N. C., has placed on the market, among other things, a special valve dresser and reseater for Ford cars; the accompanying illustration shows the general construction.

The big end of the tool carries a cutter set at the proper angle, and when a valve is in place for dressing its stem extends into an accurately drilled guide which holds it steady and centers it. A screw at the end of the guide acts as a limit stop to prevent feeding in of the valve when the dressing has progressed sufficiently far, and to insure uniformity of valve stem length. A pinching screw holds the stop screw in adjustment. The valve is turned by means of the small yoke shown at the bottom of the picture, the yoke being placed in an ordinary brace. A lug on the bottom of the tool provides a grip for the vise jaws, so that the device can be firmly held when in use. The tool for facing the valve seats is shown under the dresser, and consists of a cutter with a stem that extends down into the valve-stem guide and a shank to be held in the brace. The facing tool is carried in a hole in the main tool, as shown, when not in use. The price of the dresser complete is \$6.50. Other types are made that will dress valves of all the usual sizes, the price, of course, being higher.

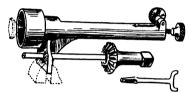
#### To Test Sparks from the Seat.

While there is nothing new in the principle of a spark gap in series with the spark plug of a cylinder, its convenience under many conditions is such that it is rather surprising that it is not more often taken advantage of. With the proper instrument, the driver can, without leaving his seat, instantly locate a cylinder that is missing, and proceed to correct the trouble without the usual process of testing each plug to find out if it is doing its work.

Such a device is made by the Bremer & Mooney Mfg. Co., of 538 Muskego avenue, Milwaukee, Wis., who style it the B. & M. spark indicator and intensifier. It takes the form of a set of enclosed spark gaps mounted on a suit-



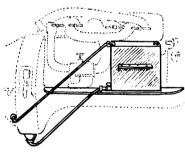
B & M SPARK INTENSIFIER



CRONE'S VALVE DRESSER



"RED DEVIL" EXHAUST HORN



SUMPTION'S VACUUM OILER

able base for attachment to the dashboard, and a "gang" switch arranged to throw all the gaps in or out of the ignition circuit. The accompanying illustration shows the instrument with the protecting cover removed. Normally, the switch is closed so that the spark gaps are inoperative. When missing occurs the driver lifts the switch with his foot and at once the sparks at the gaps, which are visible through a transparent window, show which plugs are sparking and which are not. Further, the makers claim that the inclusion of the gap in the circuit of the erring plug causes an intensification of the current which burns off carbon, oil or other substance that may be interfering with ignition, restoring normal conditions if the plug itself is in good condition. Thus the driver can often substitute a mere kick of the switch for the more usual and more tedious cylinder-to-cylinder canvass for trouble and the subsequent removal, cleaning and insertion of the plug.

#### Sumption's Vacuum Oiler for Fords.

It may be that the inventor of the oilfeeding device shown in the accompanying illustration has kept chickens, in which case it is possible that he has used an automatic drinking vessel for them. Maybe, on the other hand, he hasn't done either. Anyway, the Vacuum oiler for Ford cars made by E. P. Sumption, of Kalamazoo, Mich., works on the same principle as the chicken water trough. That is, the liquid feeds when the level in the lower container drops below the mouth of the feed pipe.

Briefly, the device is designed to carry a supply of oil and to feed it into the Ford engine crankcase as it is required, and so eliminate the necessity for more or less frequent filling, and to make the filling less troublesome when it has to be done. It consists of an oil tank mounted on the engine with two pipes running to the flywheel casing. The pipe from the top of the tank runs to a hole in the crankcase, from which a plug is removed. The second pipe, from the bottom of the tank, runs to the bottom of the case. The hole to which the top pipe is connected is at the normal oil level of the motor. When the oil drops below the normal level it uncovers the mouth of the pipe, allows air to enter the container above, and oil runs into the engine case through the bottom pipe until the level rises high enough to block the mouth of the air pipe and stop the flow by preventing the admission of air. Obviously the feed is entirely automatic. as long as there is oil in the container. and there is nothing that can get out of order. In order to prevent oil from flowing into the crankcase when filling the container a valve is provided in the lower pipe.

#### Helping Along the Hacksaw.

The work of a hacksaw in wrought iron or steel will be much facilitated if a little oil is used, just as oil is used on a drill or lathe tool. The teeth cut better and keep cooler.



#### MOTOR WORLD

### QUEER IGNITION EFFECTS FROM STATIC ELECTRICITY

Seldom Suspected Phenomenon and the Pranks it Plays—Bosch Company Offers Helpful Criticism.

The theories that lie behind every detail of the automobile, and particularly those connected with the operation of the motor, include not a few things that are entirely unsuspected even by the men whose business it is to be well posted in

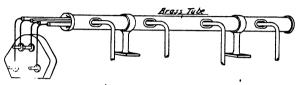
ciently to overcome the resistance offered.

Cable insulation has the ability to absorb electricity, and this is known as "capacity." And, curiously enough, the thicker the insulation on the cables the greater its capacity. Whence it follows that too much insulation is distinctly an evil, and that quality, not quantity, is what counts.

"At the instant that the high potential discharge is released from the magneto armature secondary winding and sent through the cable that is in connection with the spark plug," says the "Bosch News," which publishes the accompany-

tard the high potential discharge will tend to the detriment of the ignition system. If the ignition systems are installed so that the high tension leads are twisted together, or are carried in a container that is insulated from the metal part of the engine, it obviously will result in unsatisfactory operation.

"It can be seen from the foregoing that to obtain satisfactory ignition, the individual cables must be separated one from the other; if this is not feasible their surfaces must be given a perfect ground. The additional precautions that should be taken so as to obtain as near perfection as possible, are as follows:



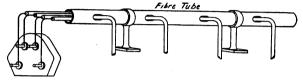


FIG. 1-BRASS CONDUIT FOR HIGH TENSION LEADS

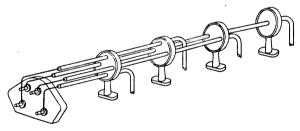
FIG. 2-FIBER CONTAINER WITH GROUNDED BRACKETS

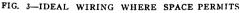
automobile practicalities; and while in many cases the lack of familiarity with the more abstruse side of the matter does not make much difference as long as practical experience is available, there are occasions when nothing but a smattering of theory will serve to clear a clouded mechanical atmosphere.

Among the things that sometimes happen to a motor and which cannot be diagnosed by mechanical methods there is the erratic and, to the purely practical man, incomprehensible action of the ignition system under certain conditions. ing diagrams, "it results in this cable taking on or absorbing a part of the electrical charge. According to the laws of electricity, this charge is capable of causing other bodies to become charged when brought in surface contact with the cable that carries the high potential discharge.

"If other surfaces are in contact and no means are provided for discharging this static condition, it may become sufficiently intense to cause a spark to occur in a cylinder that is not in a firing position. This results in backfires, and when the capacity is raised, due to havThe cable lengths are to be as short as possible, loops or frequent twists about various parts of the engine or chassis are to be avoided, sharp curves or angular bends are not to be made, and last, but not by any means the least important, every possibility of the cables becoming chafed must be prevented, for this is one of the many reasons why an engine sets up chronic misfiring—the high tension current shoots out of the chafed or bared cable and finds an easier path to ground.

"There is just one more important





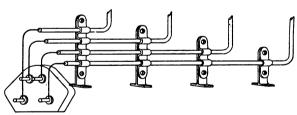


FIG. 4-EFFECTIVE GROUNDING OF CABLE SURFACES

The effects, which are apparent, not to say aggravating and disconcerting, are the ignition of the charges at times when the ignition apparatus does not sanction the passing of a spark, and backfiring due to premature ignition for which there is absolutely no reason that is traceable - unless the investigator has the aforesaid smattering of theory. The cause, in brief, is to be found in the accumulation and discharge of static charges which, strange though it may seem, lurk in the insulation of the hightension cables, from which they leap across the gaps of the plugs, regardless of time, when the pressure rises suffiing numerous cables in surface contact with each other, the high tension discharge is required to satisfy this increased capacity, and in consequence, if the magneto or ignition source does not supply an extremely high potential, there will not be sufficient energy remaining to cause the current to jump the gap between the spark plug electrodes in the cylinder which is in firing position.

"The purpose of the high potential discharge is to break down or bridge the gap between the electrodes and to create a path over which the lower voltage or dynamic current can flow. This fact proves that anything which tends to re-

point that needs comment; it is concerning the thickness of the insulation. The average person believes that the thicker or heavier the insulation the less liability there will be of trouble. While this seems reasonable, yet added insulation increases the capacity of the cable and thus static conditions are considerably encouraged. Medium thickness and proper quality of insulation are important factors in the selection of cable for ignition purposes.

"In the diagrams herewith a number of methods for installing the ignition cables are illustrated; these may be helpful when re-wiring an engine. Quite frequently ignition troubles can be eliminated not by 'tinkering' with the magneto or spark plugs, but by installing new and properly insulated cables and using one of the recommended methods shown.

"The arrangement shown in Fig. 3 is one that quite properly might be termed the ideal method for running ignition cables, the only drawback, if it can be called such, is the liability of the cables becoming disarranged, or damaged; the amount of free space under the bonnet of the average car is small and in cleaning or adjusting, the open cables offer possibilities of accidental disarrangement. If the cables were run in this manner, the space permitting the use of a metal covering, the arrangement would be excellent.

"Fig. 4 shows an installation somewhat similar to Fig. 3, but it is possible to carry the wires more closely together, due to the fact that the surfaces of the cables are grounded at regular intervals. This method, however, has the one drawback, mentioned in the preceding paragraph.

"Fig. 2 illustrates one method of running the high tension cables through a container which is of a non-conductive material, fiber for instance. Under certain conditions, unsatisfactory ignition operation will result, due to the lack of providing a discharge for whatever static charges may collect on the cables.

"Fig. 1 is the same as Fig. 2, differing only in that the container is of metal and whatever static charges collect will be carried by this metal container to ground."

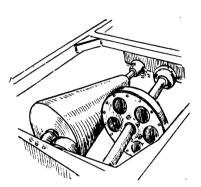
#### Engine Governor of Universal Type.

By way of overcoming the objections to the ordinary type of governing device, the Duplex Engine-Governor Co., of 80 Maiden Lane, New York City, has perfected and placed on the market a new device of the kind which differs from all others and which has a number of interesting features. The Duplex governor, as it is styled, is of the throttling type and differs from others in that it is inter-connected to both the engine and the transmission mechanism of the vehicle.

Nominally, it is of the centrifugal pattern with a gear wheel mounted with the floating member in such a way that either motor speed or vehicle speed operates the throttle, according to which is the higher of the two. Hence, with the engine running idle, motor speed, which then is higher than vehicle speed, operates the governor; but when the car is driven in high gear, vehicle speed then controls the throttle valve. Similarly, when the low gears are used, motor speed governs the throttle opening. The throttle valve itself is unusual in that it is in the form of a grid so arranged that with a maximum movement of but one-eighth of an inch either maximum opening or full closure is obtained. The device is adapted for application to either pleasure or commercial vehicles.

#### Priction Transmission Minus Disks.

The designing of many light cars and cyclecars, both here and abroad, has brought about an increased interest in the friction type of transmission, which possesses many qualities that are of par-



DELACOUR FRICTION CONE

ticular value to small, light-weight machines. One of the French cars in which friction gear is used is the Delacour, in which, however, the more or less conventional arrangement of disks is shunned.

As the accompanying illustration shows, the Delacour transmission consists of a cone and a wheel, changes of speed being obtained by bringing the edge of the wheel in contact with the surface of the cone at various points. While the length of the cone is such that somewhat more space is occupied than is the case with the disk arrangement, it is claimed that the running contact is better than with the disks, because there is no sliding motion between the driving member and the driven member.

With a wheei with its edge in contact with a disk there is a point at which the speeds of the two members agree exactly; if that point is at the center of the wheel edge, there is sliding contact and friction on either side. In the case of the cone and wheel the surfaces in contact travel at exactly the same speeds at all points. Whether or not the theoretical advantage is a practical advantage as well, and whether or not there are disadvantages that balance the advantage

tages, the application is an interesting

#### Salesroom Stunt that was Antedated.

"The old adage that 'there is nothing new under the sun' is forcibly illustrated by the publicity given in the Motor World of January 22nd to the stunt pulled off by the Detroit manager for Studebaker," writes P. A. Lord, president of the Lord Motor Car Co., of Los Angeles. "We beat this gentleman by more than a month, performing this stunt on December 9th, and led him two or three better by running a Maxwell "25" under its own power and without tying or otherwise fastening the steering gear, but merely setting the steering gear, starting the motor, throwing it into low, getting out of the car and leaving it. It ran for 90 minutes without a stop, covering five miles in a 32-foot circle and not varying four inches from the course. The purpose of the stunt was to demonstrate the irreversibility of the steering gear. The other display cars were backed against the walls."

#### Lower Insurance for Electrics, too.

Though the danger of an internally started fire on an electric vehicle does not appear to be very great, the premiums on electric vehicle fire insurance have been sufficiently high to induce the insurance committee of the Electric Vehicle Association of America to see what could be done to bring about a reduction. The committee, of which Day Baker, of Boston, is chairman, has notified its members that the Automobile Insurance Co., of Hartford, Conn., has agreed to make a reduction of 15 per cent. in the premiums on electric vehicles, either pleasure or commercial, when such vehicles are equipped with "the Pyrene fire extinguisher, or other approved extinguishers, when properly attached."

#### Chamber Issues its First "Hand Book."

Listing considerably more cars than have been listed before, the 1914 edition of the "Hand Book of Automobiles." which is also the first edition of the volume to appear since the consolidation of the National Association of Automobile Manufacturers and the Automobile Board of Trade, to form the National Automobile Chamber of Commerce, has made its appearance. As usual, the volume contains concise specifications and clear illustrations of the products of those manufacturers who are affiliated with the N. A. C. C., and for the first time it appears with board covers instead of paper ones.

### VARIETY IN PLIERS THAT MAKES FOR PROFIT

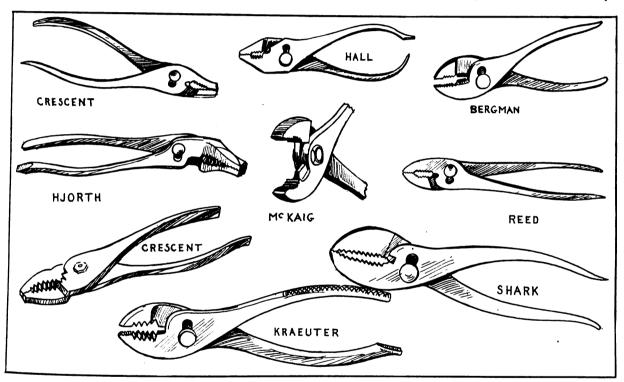
## Differences in Common Tools Which Help Dealer and Garage-man to Stimulate a Demand For Them—Value of Proper Display as "Gentle Suggestion"—Several Types of Pliers Contrasted.

"Haggerty," said Billy Rea to his day foreman, as he placed a shiny new grease gun on top of his office show case, "Haggerty, did you ever stop to consider the force that lies in gentle suggestion? Probably not," he continued, as a fleeting expression of mystery chased itself across the foreman's face.

squirting grease all over his car with the garage gun, provided he is foolish enough to do it. That's not the idea; he can use the gun all he has a mind to, for all I care; he certainly can't wear it out. But he ought to have a gun of his own; it's part of his equipment. So that gun there is going to catch him. It's

cause they realized then and there that a screwdriver is a pretty good tool to have around.

"It all works right around to the same thing in the end, after all. If you show your goods, some one is going to buy them. If you don't make people realize they really need the stuff, at least you



NINE DIFFERENT TYPES OF COMBINATION PLIERS FOR WHICH A READY SALE CAN BE FOUND

"Consider that grease gun," Rea went on. "It's a plant; I put it there to catch Ward; Ward is due here this morning, because he always pays his shot regularly, and he is going to see that grease gun or I will know the reason why. Ward has been using the garage gun quite long enough, but do you know what would happen if I told him he ought to get a gun of his own?—no matter how much he really needs one? He is the kind of a customer who would get in a huff and ask me what in thunder I made such a holler about service for if I did not live up to my promises.

"And I have no objection to Ward

a suggestion in itself. No need for me to point it out and tell him he ought to have it, or one like it. He needs the gun, but he hasn't realized it yet.

#### Displays That Stimulate Sales.

"That's the way it is with a whole lot of people; they need things, but they don't realize it until some one pushes them right under their noses where they'd bite them if they could. I'm proud of the bunch of screwdrivers I sold last week, for the only effort I made to dispose of them was to put them where they must be seen. Nearly every customer bought one simply be-

have a chance to make 'em think they need it. And there is a decent little profit in such things. I'll let you into a secret. What's the single tool that drivers and owners use most? Isn't it pliers?

"Well," he went on, after lighting his morning perfecto, "that case over there contains the finest little assortment of pliers you ever saw; there are just two pairs of each kind, but there is pretty nearly ever kind on the market; and if I don't sell nearly all of them before the week is out by name is not Rea. The way I am going to do it is simply to display 'em. Before you will fill two gasolene tanks this office is going to look

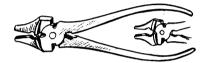
like a miniature accessory store, but there won't be anything but pliers on view.

"There will be big pliers and little pliers and about 17 different kinds of combination pliers; there will be gas pliers and wire cutters and chain pliers and—" But Haggerty had disappeared in answer to an urgent blast from a Klaxon.

When he got back his eyes bulged. Rea had ripped the cover off the little case and—well, Haggerty, seasoned garage man that he is, never had even suspected that the plier family is such a big one.

#### The Great Slip-Joint Family.

Nor had Haggerty been occupying that boat all by himself; probably there is not one dealer or garage man or repair-shop man in a hundred who can even guess the number of different kinds of pliers there are on the market. Yet, as Rea pointed out, pliers probably are used more by the average owner and driver than any other single tool in his



CRONK COMBINATION TOOL

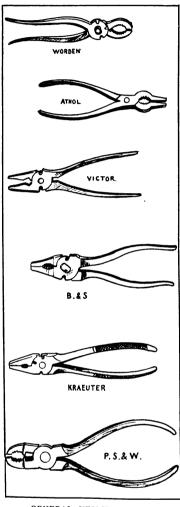
equipment. They are one of the few things for which a demand is very easily stimulated; they sell and they sell readily—provided they are well displayed. Such goods always are their own best advertisement.

Of all the members of the great plier family, the combination, or slip joint plier, probably is the best known, for it is used wherever automobiles are used and has come to be a part of the standard equipment of very nearly every car. There are very few plier manufacturers who do not list pliers of the kind and the list of makers is an unusually long one. Manifestly, they are not all the same in every respect, though the principle is the same in all.

The Kraeuter combination plier, which is produced by Kraeuter & Co., of Newark, N. J., for instance, is typical of the general type. It is a type that has become so well known that it is scarcely necessary to point out that the jaws are adjustable and can be made to fit big objects quite as well as small ones simply by slipping one jaw on the center bolt—hence the name "slip joint" plier. In addition, where the jaws rub together a wire cutter is formed, the action being exactly the same as the action of a pair of scissors. The plier is made of

forged steel, carefully finished, and as the picture makes plain, one side of the handle can be used as a screwdriver.

The combination plier produced by the McKaig Drop Forge Co., of Buxalo, N. Y., is of a similar type, but it differs from the Kraeuter in the formation of the cutting portion. In the McKaig, the cutters are considerably larger than they are in the Kraeuter; the side plates



GENERAL UTILITY PLIERS

are extended quite a little way, as is shown in the picture. One of the important results of the construction, according to the makers, is that the cutters will cut, no matter how blunt they may become through use; similarly, it is pointed out, slackness in the center bolt because of wear does not impair the cutting ability. Otherwise the plier is fashioned of drop-forged tool steel and measures 7½ inches in length.

Both of these pliers have jaws of about the same shape; but note the difference between them and the shape of the jaws of the Shark pliers which are produced by the Wakefield Mfg. Co., of Wakefield, Neb. Shark jaws are entirely different. Their inventor is a blacksmith and also a bit of a genius. He wanted a pair of pliers that couldn't slip if they wanted to. And so he evolved the peculiarly shaped jaws that are used. The teeth are one of their distinctive features; they are sort of staggered saw teeth that give an everlasting grip. The curve of the tooth line was designed to give a square grip for a considerable distance. Another individuality of Shark pliers is that the cutting part is placed fairly close to the center bolt, so that even considerable slackness will not result in failure to cut. In common with other pliers of their type, one "leg" of the handle is fashioned into a screwdriver and there is a size of Shark pliers for nearly every use-six-inch, seven-inch and 10-inch.

The Bergman Tool Co.: of Buffalo, N. Y., produces a combination plier that is much like others of its kind, except in the arrangement of the cutting parts.



DANIELSON GAS PLIER

which are quite different from any of the others. The Bergman plier, in fact, is one of the very few of the kind which have side cutters like the cutters on a pair of lineman's pliers, the arrangement being made plain by the picture.

#### Curved Jaws That Hold Tapers.

The combination plier produced by the Crescent Tool Co., of Jamestown, N. Y., also is quite different from the general run, the jaws in this case being quite thin and bent at such an angle that a nut almost flush can be gripped. They are made in only one size-six inches in length-and their capacity is one inch. As is the case with all the other makers, however, the Crescent company produces a number of different types in addition to the one illustrated. Of these, the Universal is but one, the illustration making plain its distinctive feature. which is the shape of the jaws; one is straight and the other is so curved that even tapers can be held firmly. The straight jaw has a V-groove for holding wire and rods parallel to the jaw. This type is made only in seven-inch size.

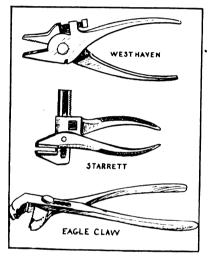
The Reed Mfg. Co., of Erie, Pa. is another company that produces a number of different styles of pliers, combination and otherwise. In the type that is

#### MOTOR WORLD

illustrated herewith, the cutter is a rather deep slot and the jaws have been designed to give what is virtually a parallel grip on nuts and bolts within their capacity. The pliers are drop-forged of high grade tool steel and come in three sizes—634 inches, 8 and 10 inches, either polished or nickeled.

#### Special Pliers for Special Purposes.

There are any number of kinds of special pliers for special purposes, of course, and among them the Hjorth, which is made by Wm. Hjorth & Co., of Jamestown, N. Y., suggests its own usefulness by reason of its peculiar shape. The slip joint principle is employed and the jaws are formed to give a grip on nuts which ordinarily could not be gripped with



TYPES OF WRENCH PLIERS

pliers. The Chas. E. Hall Co., of Buffalo, N. Y., also produces a clever combination plier which is different from any of the others. As the picture shows, the jaws are designed to give a comparatively large, flat gripping surface, while at the same time there are deep serrations to give a hold on round articles; the slip joint feature practically doubles the capacity of the plier and in addition one handle is fashioned to form a screwdriver and the other as a cotter-pin puller. But one size is made—634 inches in length—and it is furnished either mottled or full nickled.

Combination, or slip-joint pliers, are not the only ones that can be used about automobiles or that are used about them, and there is almost, if not quite, as much variety in other sorts of hand nippers. Take what have commonly come to be styled "gas" pliers, for instance. The ordinary kind, such as is made by J. P. Danielson & Co., of Jamestown, N. Y., among others, for instance, has two

openings for holding a number of different sized pipes or other round articles, and at the end there is a place to grip screws and things endwise. One side of the handle invariably is made into a screwdriver.

The Peck, Stow & Wilcox Co., of Southington, Conn., have carried the gas plier idea a little further by adding a pair of side cutters; this plier, by the way, is only one of an extensive line of pliers produced by the same company, the complete assortment including pretty nearly every kind of plier there is. E. M. Worden, of Ladysmith, Wis., has carried the idea still further and turned the gas plier into what ought to prove an exceedingly useful all-around tool. In addition to being a plier, it is 14 other things, according to the inventor, and with it it is possible to do about everything to a cotter pin that can be done to it; also, it is a wire cutter, a nail puller, a belt punch, a screwdriver and several other things.

Apparently it is not even a little bit difficult to combine the gas plier and the ordinary straight jaw plier, for quite a number of manufacturers have done so, among them the Athol Machine Co., of Athol, Mass., the Billings & Spencer Co., of Hartford, Conn., the Cronk & Carrier Mfg. Co., of Elmira, N. Y., the C. E. Bonner Mfg. Co., of Champaign, Ill., and the Kraeuter Co., of Newark, N. J.

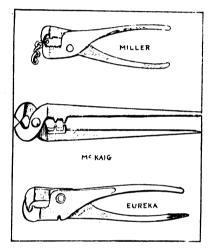
#### Combining Pipe and Flat Pliers.

Of the several types made by these companies, the Athol is the simplest and lays claim to being nothing more than a combined pipe and flat plier, the picture making plain its construction; needless to add, it is made of the best tool steel, carefully hardened and finished. The Victor plier, which is made by the Bonner Mfg. Co., is a little bit more, for, in addition, it is equipped to cut wires and also to stretch them. The wire stretcher, in fact, is one of the features of the plier. In using it, the little hardened, milled teeth at the handle end of the jaws grip the wire and the nose serves as a fulcrum. The plier itself is styled a "Button pattern" plier. The Kraeuter plier of the same type differs from the Victor in that it has no wire stretcher and has three wire cutters instead of two. The Billings & Spencer "Hayden" plier is much like the others, except that it has interchangeable cutters which can be easily replaced when worn. Three sizes are made-6-. 8- and 10-inch. The Cronk & Carrier plier really is a good deal more than its name implies. Actually it is nine tools in one, including a staple puller, two hammers, a wire splicer, a

side cutter, two button cutters, a gas plier and a wire stretcher.

The good, old-fashioned side-cutting plier, perhaps better known as a lineman's plier, always has found a welcome place in any automobile tool kit and a ready sale at the hands of any dealer, garage or repair-shop man. The type is too well known to require any explanation and the picture of the Kraeuter tool that is reproduced herewith is an excellent example of the type which comes from so many makers.

Among the great number of pliers that are quite out of the ordinary in construction, the Eagle Claw, which is produced by the Eagle Claw Wrench Co., of Rockford, Ill., approaches the novel and is almost as much a wrench as it is a plier. As the picture shows, it is ad-



VARIETY IN CHAIN PLIERS

justable over a wide range and its jaws will grip even the tipmost head of a bolt with a bulldog grip. Obviously, it is quite as useful for holding round objects as it is for holding square ones and can even be made to take off nuts that are all but flush.

#### Tools That Serve Many Uses.

The Starrett patent expansion plier, which is made by the L. S. Starrett Co., of Athol, Mass., is another tool that is a good deal more than a mere plier. In fact, it is a combination plier and wrench. The distinctive feature of the tool is that one of the jaws may be adjusted to suit any piece, straight or tapering, from zero up to 11/4 inches. The adjustment is made by turning a small worm screw similar to that used in a bicycle wrench. Because the jaw is adjustable, the handles can be kept at just the proper distance from each other to give the necessary grip and permit the operator to exert the greatest strength.

Incidentally, because of the adjustability of the jaws, the fulcrum can be made somewhat shorter than is the case with ordinary pliers; hence less strength is required to obtain the same grip at the jaws. The tool will grip square, tapered or round objects with equal facility.

#### Wrench and Pliers in One.

The Westhaven patent plier wrench is, as its name implies, a combination of plier and wrench which differs from all others in that it has a setscrew for adjusting the opening of the jaws so that the tool can be used as a wrench on occasion. In using the tool on round work, for instance, the jaws can be set to the proper size with the aid of the screw when they will grasp and release the work automatically, working as a ratchet. As a wrench, the tool is strong enough to be used by only one handle, and when it is used as a plain plier, the set screw lies parallel to the handle, where it is out of the way. The tool is made by the West Haven Mfg. Co., of the Connecticut city for which it is named, and comes in two sizes-61/2 and 81/2 inches.

Although tire chain repair tools do not properly belong in the same class with pliers, they are quite as useful as pliers and it is altogether probable that the wideawake dealer, garageman or repairshop will find as ready a sale for them. It is practically impossible to repair a Weed chain with an ordinary pair of pliers, and the method of cutting broken cross chains with a cold chisel and a hammer is slow and unsatisfactory. For this reason a number of special tools have been devised to make lighter such work.

#### Chain Tools With Sharp Jaws.

Among them, the Necessity, which is distributed by Chas. E. Miller, of New York City, and the Eureka, which is produced by the Buffum Tool Co., of Louisiana, Mo., are much alike. Both have sharpened jaws which wedge their way between the ends of the fastening link, thus freeing the cross chain; a broad, flat place is provided nearer to the center bolt, where the pressure obtainable is greater, for closing the new fastener securely in place. The McKaig chain tool, which comes from the shops of the McKaig Drop Forge Co., of Buffalo, N. C., operates in practically the same manner, the essential difference being that the closer is on the handle side of the center bolt; also, the closer is formed to hold the chain fastener in such a way that it cannot turn sidewise while it is being clamped shut.

### NEED OF IMPROVEMENT IN AUTOMOBILE SALESMANSHIP

Car Buyer Better Salesman Than Man Who Attempts to Make Sale, Says Buick Man—Inflating Values Harmful.

The man who goes into a salesroom to buy a car is a better salesman than the average automobile salesman who attempts to sell the car, according to R. H. Collins, sales manager of the Buick Motor Co., who declares that while the automobile industry in its manufacturing and engineering phases has made wondrous strides, the selling end has lagged woefully behind.

Automobile manufacturers, he states, do not use the same judgment in selecting salesmen as they do in picking engineers, and he expresses the belief that when the standard of selling is brought up with that of engineering a great change will have been effected.

"I am firmly convinced," he says, "that we should hunt through the entire realm of merchandising and get from it the best salesmen that can be found. Men who sell pianos, cash registers, corsets, steel, or, in fact, any commodity, can be made over into automobile salesmen provided they possess the real elements of salesmanship.

"There is no particular secret about the selling of automobiles. It is merely a question of common sense. In other lines of business salesmen familiarize themselves with the merits of their products, then talk up those merits until the sale is made. In the automobile industry, however, we find a peculiar situation inasmuch as there is a tendency among salesmen to misrepresent their goods.

"For instance, some salesmen exploit a \$1.500 car until the buyer believes he is getting about \$15,000 worth for his money. Naturally this leads to dissatisfaction in the mind of the buyer, and he ceases to have confidence in the concern from whom he has purchased the car. Now, the car was excellent value for \$1,500, and the man was not cheated, except that he had been led to expect more than any sane manufacturer or dealer would think of giving him. When we are able to find men who will tell the truth about their product we will have solved the problem of merchandising automobiles. Until we do we must keep on hunting.

"In the Buick company we have been able to obtain a well rounded staff of

genuine salesmen, but we can always make room for the real thing in salesmanship.

"I am impressed that the manufacturers are sincere in producing the best possible value in material and workmanship and that they honestly desire to be square with the public. The difficulty is to find salesmen who will reflect this honest purpose while exploiting their products.

"The average buyer of an automobile is more than an average business man. At the present time he has little difficulty in getting the best of the bargain while dealing with the average automobile salesman. I feel, however, that in the development of this new industry we will come to a time shortly when the sales department will be on a par with the engineering department, which has been perfected to a degree that is the marvel of all other lines of manufacturing."

#### Painting Instruction for Amateurs.

The Arsenal Varnish Co., of Rock Island, Ill., has a message of cheer for any one with a hankering for a better appearing motor car. The message is contained in a 40-page booklet-the fifth edition, by the way-which that company just has prepared for distribution and in which there are instructions, almost in words of one syllable, covering very nearly every question that any one proposing to repaint a car would be likely to puzzle his brains over. In addition to telling how to "touch up" the rough spots that bespeak collisions, or other accidents, there are a number of suggestions for "livening up" appearance by the addition of striping, or, as it is described in the booklet, "blacking off the mouldings." Incidentally, little is left to conjecture, for most of the steps in the various operations are clearly illustrated with well-drawn pictures.

#### Using Hacksaw in Thin Metal.

The cutting of sheet metal with a hacksaw is not difficult if the work is properly done-which is easy-but if not it may be distinctly in the "mean job" category. It is extremely hard to start the saw if it is applied at right angles to the sheet because the teeth catch, and if too much force is applied they break off instead of cutting through. If, however, the saw is started at an acute angle to the surface, with the handle end next to the sheet and the other end beyond the edge, the saw will work smoothly and easily and it will be far easier to keep it cutting in a straight line.

#### MOTOR WORLD

### THREE "SUNS" SHINE OVER PITTSBURGH DEALLRS' SHOW

Half Score of Dealers Display 14
Brands of Pleasure and Commercial Cars—Bunting is
Conspicuously Absent.

Under a blue canopy "sky" illuminated by three immense silver "suns," the fourth annual show of the Pittsburgh (Pa.) Automobile Show Association was opened on Saturday afternoon, 14th inst., and despite a severe snowstorm and bitter cold a big crowd drifted through the doors of Exposition Hall as soon as they were opened. The show will hold the boards and the attention of visitors until Saturday night, 21st inst.

As was the case at the last Pittsburgh show, both pleasure and commercial vehicles are shown together, but there is this important difference between the present show and all others. The show that was opened last Saturday night is considerably larger than any previous show, and the decorations are much more elaborate. In addition to the three "suns," which are great silvered balls studded with electric lights, there are hundreds of twinkling stars in the bunting firmament, to say nothing of strings of lamps suspended around the side walls. White and blue are the predominating colors.

Contrary to the usual practice, the bandstand is placed directly in the center of the hall, high above the heads of those who perambulate the aisles. The space beneath the balconies has been rendered beautiful with the aid of painted scenes, and high over the top of it all there hangs the portrait of the particular "Ethel" who is supposed to represent the spirit of the show. Among the exhibitors are the following:

Neighbors Motor Co., Hupmobile; Hiland Automobile Co., Peerless; Mc-Curdy-May Co., Pierce-Arrow; Pittsburgh Mercer Automobile Co., Mercer, Stearns-Knight, Jackson, and Mais commercial; Buick Motor Co., Buick; Buhl-Regal Car Co., Regal and Moon; Pittsburgh Haynes Automobile Co., Haynes and Krit; Lange Auto Truck Co., Lange commercials; Oakland Motor Co., Oakland; Oakmount Motor & Boat Co., Pathfinder and Wahl; Martin & Coulter Co., Shelton and Republic commercials; White Co., White; Forbes Motor Car Co., Maxwell and Stutz; Williams-Hasley Moto Co., Mitchell; L. G. Martin & Son, Jeffery; Cadillac Motor Car Co., Cadillac; Painter-Dunn Co., Overland;

West Penn Auto Co., Chase commercials; Aaron Deroy Motor Car Co., Studebaker; Klingler Co., Imperial; Kossler Motor Sales Co., Four-Wheel-Drive commercials; Havers Motor Car Co., Havers.

Motor Show in Furniture Building.

After a full week of crowded aisles, the fifth annual Grand Rapids (Mich.) show was formally brought to a close on Saturday night last, 14th inst., the great doors of the Furniture Exposition building swinging shut at midnight. Despite bitterly cold weather, the attendance was unusually good, the crowd that passed the ticket takers on the opening night establishing a new record. As has been the case in years gone by, pleasure vehicles, both gasolene and electric, commercial vehicles, motorcycles and accessories were shown together. The decorations consisted of quantities of pale blue and white bunting set off by great bunches of chrysanthemums.

Among the exhibitors of vehicles were the following: H. W. Musselwhite; Ray Barnes; Austin Automobile Co.; Barkwell-Buick Sales Co.; G. P. Dowling; International Harvester Co.; Mitchell Motor Sales Co.; W. D. Vandecar; Robert Willey Auto Co.; E. C. Blickley; E. L. Brooks; Chalmers Auto Sales Co.; Duplex Power Car Co.; S. A. Dwight: Grand Rapids Auto Co.; M. H. Luce: Metz Garage; Parcel Post Equipment Co.; Phelps Auto Sales Co.; A. A. Scott; Stratton-Woodcock Auto Co.; Western Michigan Cadillac Co.; Adams & Hart; Becker Auto Co.; W. S. Farrant; Grand Rapids Overland Co.; B. F. Kenyon; Bruff W. Olin; Oswald Motor Car Co.: Pack Auto Sales Co.

#### New York Aldermen Would "Post" Law

That old but not entirely extinct idea that those who drive cars are nearcriminals who require that the law be constantly dangled in their gaze, apparently lies beneath the agitated state of mind of Alderman Henry Robitzek of New York City, who thinks he "seen his duty and done it."

At any rate, Robitzek has offered an amendment to the present code which would require the posting in all garages and in some other places copies of the law and the penalties; he would make it go hard with anyone who mutilated or tore down one of his placards and, in addition, would make all vehicles come to a complete stop when about to cross any north or south street. Cross-town travel under the Robitzek system would be like riding the jerk-the-jerks at Coney Island.

### CARS AND TRUCKS MINGLED IN ANNUAL ST. LOUIS SHOW

Exposition Hall Elaborately Transformed for "Smoky City's" Exhibition—Trucks and Cars
Staged Together.

As was the case last year, when the St. Louis (Mo.) dealers decided almost at the last minute to concentrate both pleasure and commercial vehicles in a single show to run but one week instead of two, the ninth annual exhibition, which, as usual, was housed in the Coliseum and which was brought to a close Saturday night, 14th inst., held both types of cars at once, to say nothing of a goodly number of accessories. The doors of the Coliseum were opened the previous Monday.

All told, just 10 dealers exhibited their wares, the list including 14 different makes of pleasure and commercial vehicles. Accessories were displayed by 13 dealers. In marked contrast to other local shows, not an inch of bunting or other colored cloth entered into the decorative scheme. Instead, those who had such matters in hand, relied entirely upon great masses of wild smilax and Florida moss to relieve the barrenness of the big hall.

Occupying a place directly in the center of the building there was an immense bed of roses, from which the aisles radiated like the spokes of an immense wheel.

The complete list of exhibitors was as follows:

Vehicles: De Luxe Automobile Co., Henderson gasolene and Argo, Borland and Broc electrics; Imperial Motor Car Co., Imperial; Meyer Motor Car Co., Speedwell pleasure and commercial; Cartercar Co., Cartercar; Corby Supply Co., Little Giant commercial; Palmer-Meyer Motor Co., Palmer commercial; American Welding Co., Menominee and Service commercials; Havers Motor Car Co., Havers; Pathfinder Motor Car Co., Pathfinder; Auto Clearing House, Haynes.

Accessories: Hurck Motor & Cycle Co., Indian motorcycles and supplies; Koochook Rubber Co.; Newell & Eccles; Weis-Bosely Co.; Leuitweiler Battery & Repair Co.; Pyrene Co.; Motometer Co.; Carlos Mareno; Robert Rotermich; Sandbo Starter Co.; Ever-Tight Piston Ring Co.; Automatic Tire Rest Co.; Central Welding Co.; Auto Starter Sales Co.; Dann Oil Cushion Spring Co.; C. F. Elrick Co.



1,078,149. Resilient Wheel. Harold Kirkby, Middletown, Conn. Filed Apr. 15, 1913. Serial No. 761,222. (Wheel with both radial and circumferential coil springs.) 2 claims.

1,078,150. Spring Wheel. Herbert C. Knight, Portland, Me. Filed July 6, 1911. Serial No. 637,-180. (Wheel with sectional tire and springs under sections.) 3 claims.

1,078,151. Starting Device for Internal Combustion Engines. Burt 1. Lamb, Norwalk, Ohio, assignor of one-half to Harry R. Mason, Monroeville, Ohio. Filed Oct. 23, 1912. Serial No. 727, 461. (Spring starter.) 3 claims.

1,078,153. Tread for Tires. John Francis Le Baron, Chardon, Ohio. Filed Mar. 27, 1913. Serial No. 757,241. (Non-skid with straight crosshars and connecting means.) 4 claims.

1,078,196. Starting Device for Explosive Engines. Richard E. Hammond and Stanton W. Forsman, Colorado Springs, Colo.; Mary Elizebeth Hammond residuary legatee of the estate of said Richard E. Hammond, deceased. Filed Dec. 5, 1910. Serial No. 595,660. (Fluid pressure starter with reciprocating action.) 10 claims.

1,078,200. Electromagnetic Tachometer. Nevil Monroe Hopkins, Washington, D. C., assignor, by mesne assignments, to The Electric Tachometer Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Aug. 1, 1912. Serial No. 712,738. (Electrically operated revolution counter and speed indicator.) 15 claims.

1,078,260. Gas-Engine Starter. Chas. H. Cuno, Meriden, Conn. Filed Jan. 27, 1913. Serial No. 744,287. (Ignition starter.) 7 claims.

1,078,286. Gas-Engine. Louis Illmer, Jr., Cincinnati, O., assignor to Illmer Gas Engine Co., a corporation of Delaware. Filed April 4, 1907. Serial No. 366,289. (Valve-operating linkage system.) 10 claims.

1,078,322. Anti-Skidding Device. Theodore B. Thomas, Quincy, Mass. Filed Feb. 12, 1913. Serial No. 747,879. (Small wheel pressed against road to prevent skidding.) 1 claimf.

1,078,336. Speed-Governor. Theodore Douglas, Scarboro, N. Y. Filed May 4, 1912. Serial No. 695,296. (Adjustable centrifugal governor operating on throttle.) 6 claims.

1,078,337. Power-Veiticle Governor. Theodore Douglas, Scarhoro, N. Y. Filed Oct. 21, 1912. Serial No. 726,968. (Adjustable centrifugal governor operating on throtttle.) 7 claims.

1,078,340. Ventilator for Vehicles. David Ferguson and James R. Way, Buffalo, N. Y., assignors to The Pierce-Arrow Motor Car Co., Buffalo, N. Y. Filed Sept. 23, 1911. Serial No. 650,864. (Ventilator in bottom of windshield.) 10 claims.

1,078,430. Resilient Wheel for Motor Cars and the Like. John Elphinstone Graham, Battersea Park, and George Wallace. London, England. Filed Sept. 30, 1912. Serial No. 723,230. (Double chambered preumatic tire of metal and rubl cr.) 2 claims.

1,078,438. Fuel Pump for Internal-Combustion Engines. Knut Jonas Elias Hesselman, Stockholm, Sweden. Filed March 29, 1913. Serial No. 757,581. (Cam-operated pump for injection type motors.) 3 claims.

1,078,456. Mud-Guard, Charles Hillyard Nichols, Wolverton, England, Filed Oct. 31, 1912. Serial No. 728,922. (Sidash preventer at bottom of wheel suspended from mudgaard.) 4 claims.

1,078,461. Wheel, Mitchell D. Price, Miami, Fla. Filed Jan. 19, 1912. Serial No. 672,262, (Coiled springs between inner and outer rims,) 1 claim.

1,078,474. Ball Bearing. Josef Vorraber, Frankfort on the Oder, Germany, assignor to Markische

Maschinenbauanstalt "Teutonia," Gesellschaft mit beschrankter Haftung, Frankfort-on-the-Oder, Germany. Filed May 28, 1913. Serial No. 770,447. (Double-row ball bearing with overlapping balls.) 2 claims.

1,078,536. Shock Absorber. Augustin Camporini, Chicago, Ill. Filed May 7, 1913. Serial No. 766,002. (Friction disk and double-arm shock absorber.) 5 claims.

1,078,579. Demountable Rim. Joseph M. Gilbert, Mount Vernon, N. Y., assignor, by mesne assignments, of one-half to The B. F. Goodrich Co., New York, N. Y., a corporation of New York, one-fourth to The Goodyear Tire & Rubber Co., Akron, O., a corporation of Ohio, and one-fourth to The United States Tire Co., New York, N. Y., a corporation of New York. Filed Sept. 15, 1910, Serial No. 582,121. Renewed April 23, 1913. Serial No. 763,180. (Two-piece rim with bayonet-lock fastenings.) 6 claims.

1,078,581. Sheet-Metal Wheel. Felix B. Horn and Adam Wagner, Cedar Falls, Ia., assignors to Wagner Míg. Co., Cedar Falls, Ia., a corporation. Filed June 15, 1911. Serial No. 633,243. (Sheet steel wheel made in halves.) 6 claims.

1,078,591. Carburetter. Wellington W. Muir, Baltimore, Md., assignor to Muir Co., Inc., Baltimore, Md., a corporation of Delaware. Filed Feb. 19, 1913. Serial No. 749,391. (Constant level carburetter with auxiliary air and fuel valves operatively connected.) 10 claims.

1,078,592. Carburetter. Wellington W. Muir, Baltimore, Md., assignor to Muir Co., Inc., Baltimore, Md., a corporation of Delaware. Filed April 22, 1913. Serial No. 762,951. (Suction controlled float feed carburetter.) 8 claims.

1,078,600. Brake. Howard C. Marmon, Indianapolis, Ind., assignor to Nordyke & Marmon Co., Indianapolis, Ind., a corporation of Indiana. Filed Aug. 1, 1912. Serial No. 712,719. (Internal expanding brake with semi-circular shoes.) 11 claims.

1,078,602. Automobile Seat Construction. Franklin J. Morgan, Los Angeles, Cal. Filed Oct. 9, 1912. Serial No. 724,358. (Six seats in two rows with middle seats' slightly to the rear of side seats.) 2 claims.

1,078,632. Spring Wheel. Vincenzo Mancini, Schenectady, N. Y. Filed Aug. 26, 1912. Serial No. 716,971. (Wheel with spring spokes.) 6

1,078,699. Rotary Valve for Explosive Engines. Frederick G. Scheir, Detroit, Mich. Filed June 10, 1912. Serial No. 762,613. (Means for attaching plows, etc., to agricultural tractors.)

1,078,760. Vehicle Wheel. Herbert W. Alden, Detroit, Mich., assignor to The Timken-Detroit Axle Co., Detroit, Mich., a corporation of Ohio. Filed Jan. 10, 1913. Serial No. 741,244. (Hublock for demountable wheel.) 8 claims.

1,078,786. Automobile Door-Hinge. Frank Hanba and Robert Gladfelter, Detroit, Mich. Filed March 29, 1913. Serial No. 757,505. (Three-Fink concealed door hinge.) 3 claims.

1.078,798. Sectional Rim. Sydney S. Morris, Watertown, N. Y. Filed Sept. 6, 1912. Serial No. 719,032. (Sectional-rim wheel construction.) 1 claim.

1.078,801. Tractor Connection. Geo. D. Munsing, New York, N. Y., assignor to George D. Mansing and Charles E. Ingersoll. New York, N. Y., a copartnership doing business as Munsing & Ingersoll. Filed Aug. 13, 1912. Serial No. 714,817. (Friction controlled tractor coupling) 4 claims.

1.973.816. Atoraizing and Mixing Valve, Wilson D. Craig Wright, Philadelphia, Pa., assignor of one balf to Joseph Wright, Philadelphia, Pa. Filed Iune 3, 1912. Serial No. 704,123. (Spraying valve for injection type motors.) 4 claims.

1.078,820, Tractor, Edmund Bellemare, Peoria, III. Filed Sept. 19, 1910, Serial No. 582,756, (Four-wheel-drive tractor.) 8 claims.

1,078,876. Metallic Wheel-Tire. Charles Quintus, Garner, Ia. Filed Jan. 6, 1913. Serial No.

740,569. (Wheel with concentric rims and in terposed springs.) 2 claims.

1,078,885. Shock-Absorber. John B. Thomas. Lakewood, N. J. Filed Aug. 9, 1912. Serial No. 714,147. (Hydraulic shock absorber.) 2 claims.

1,078,889. Pump for Lubricating Systems. Eugen Woerner, Cannstatt, Germany, assignor to The Firm of Robert Bosch, Stuttgart, Germany. Filed Sept. 12, 1910. Serial No. 581,479. (Camactuated plunger pump.) 3 claims.

1,078,890. Pump for Lubricating Systems. Eugen Woerner, Canstatt, Germany, assignor to The Firm of Robert Bosch, Stuttgart, Germany Original application filed Sept. 12, 1910, Serial No. 581,479. Divided and this application filed Oct. 3, 1911. Serial No. 652,519. (Cam-actuated plunger pump.) 4 claims.

1,078,907. Vehicle-Wheel. Flem S. Ellis, Hannibal, Mo. Filed Oct. 25, 1912. Serial No. 727, 810. (Spring hub.) 1 claim.

1,078,924. Starting Device. Willis Johnston. Schenectady, N. Y. Filed Aug. 17, 1911. Serial No. 644,489. (Mechanical starter with ratchet and anti-kick device.) 2 claims.

1,078,976. Automobile Wheel-Brake. Rollin H. White, Cleveland, O., assignor to The White Co., Cleveland, O., a corporation of Ohio. Original application filed Oct. 9, 1908, Serial No. 456,856. Divided and this application filed Dec. 8, 1911. Serial No. 664,565. (External contracting band brake.) 9 claims.

1,078,991. Internal-Combustion Engine, Frank-En B. Bremerman, Indianapolis, Ind. Filed Feb. 7, 1912. Serial No. 676,016. (Multiple cylinder sleeve-valve motor.) 26 claims.

1,079,008. Dynamo-Electric Generator. Gavan Inrig and Leon Inrig. London, England, assignors to Robert L. Hubler and George S. Greene. Dayton, O. Filed July 20, 1912. Serial No. 710. 537. (Lighting generator and controlling governor.) 3 claims.

1,079,020. Vehicle-Chock. William E. Perrine. Cleveland, O., assignor of one-third to Christian Girl. Cleveland, O., and one-third to Ernest W. Farr, Cleveland Heights, O. Continuation of application Serial No. 541,053, filed Jan. 31, 1910. This application filed Oct. 3, 1911. Serial No. 652,607. (Stationary metal chock.) 4 claims.

1,079,038. Collapsible Core. John Yemiker. Akron, O., assignor of 49-100ths to Robert H. Fowler, Akron, O. Filed Aug. 17, 1912. Serial No. 715,651. (Core for tire manufacturing.) 3 claims.

1,079,044. Variable Gear. Thomas Foster. Christchurch, New Zealand. Filed Sept. 25, 1912. Serial No. 722,199. (Transmission mechanism with disks with concentric circles of teeth.) 5 claims.

1,079,082. Pneumatic Vehicle-Wheel. Joseph U. Wells, Fallen l.eaf, Cal. Filed July 12, 1913. Serial No. 778,703. (Wheel with radial pneumatic cushions.) 1 claim.

1,079,090. Gearing. Vincent G. Apple. Dayton, O., assignor to The Apple Electric Co., Dayton, O., a corporation of Ohio. Filed March 4, 1912. Serial No. 681,536. (Lighting dynamo and driving system.) 18 claims.

driving system.) 18 claims.

1,079,104. Valve. Allen A. Bowser, Fort Wayne. Ind., assignor to S. F. Bowser & Co. Inc., Fort Wayne, Ind., a corporation of Indiana-Filed June 19, 1908. Serial No. 439,398. (Valve mechanism for automatic oil or gasolene pumps.) 15 claims.

1.079.131. Adjustable Spray-Nozzle. Earld II. Lamiell, Canton, O., assignor to The H. L. Hurst Mfg. Co., Canton, O., a corporation of Ohio. Filed June 17, 1912. Serial No. 704,001. (Spray nozzle with adjusting cap.) 5 claims.

1,079,164. Double Runner. Jesse E. Chenette. Montpelier. Vt. Filed Jan. 2, 1912. Serial No. 668,986. (Link-belt tractor tread.) 2 claims.

1.079,191. Combined Spring and Friction Shock-Absorber. Charles N. Snowden, Guantanamo, Cuba. Filed Dec. 13, 1912. Serial No. 730,507. (Shock absorber with double leaf spring and friction disks.) 5 claims.





### Real Money for the Dealer In Our New Sales Proposition

To Marion dealers we have submitted a NEW, MONEY MAKING SALES PROPOSITION on Marion cars. By it Marion dealers are assured a marked increase in their profits for the 1914 season over previous years.

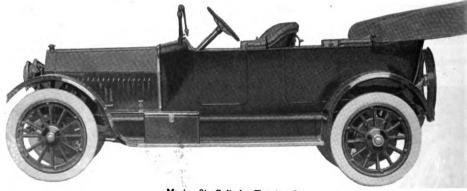
Marion cars for 1914 uphold the standard maintained during eleven years' manufacturing of high grade automobiles. Merit is predominant in both six and four cylinder models. Detail of finish and complete equipment enhance their mechanical excelence. Nine open and closed body types give a selection unequalled by any in the Marion class. This variety of types places the Marion dealer in a position to meet the car buyer's demands as to chassis or body types.

If you are in territory where Marion cars are not now represented it will pay you handsomely to write us at once. We will arrange to have our representative call and personally explain in detail this NEW, LIBERAL MARION SALES PROPOSITION. Write today.

#### THE MARION MOTOR CAR COMPANY

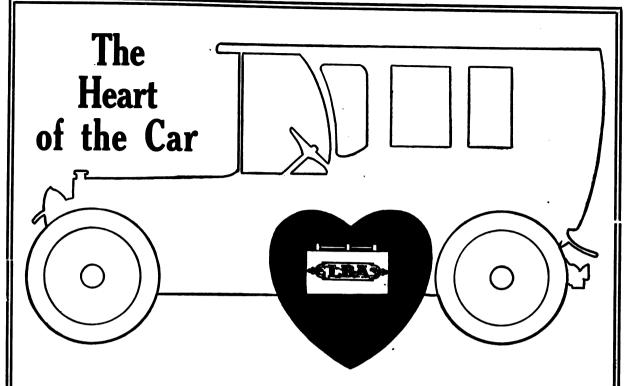
902 Oliver Avenue

Indianapolis, Indiana



Marion Six Cylinder Touring Car

All models have Westinghouse electric lighting and starting system. Stewart speedometer, demountable rims, top, top boot and side curtains, patent tire holder, etc., as standard equipment



### Is The Storage Battery

If the heart is sound and healthy and the other vital parts of the car work in accord with it, successful, satisfactory operation is assured.

But if the storage battery is low in capacity, if its voltage is weak and below normal, the efficiency of the balance of the car counts for mighty little.

Just as an affectation of the human heart deranges and interferes with the entire bodily system, so will a diseased storage battery preclude absolutely the harmonious and satisfactory performance of the other elements of the car in which it is installed.



(Licensed Under Basic Patent for Treated Wood Separator)

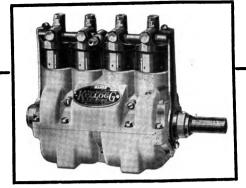
#### STORAGE BATTERIES

are chock full of vim, vibrant with the snap and sparkle and energy of buoyant, pulsating life, as unlike and superior to its shoddy imitators as the trained athlete is superior, physically, to the wheezy, short-winded victim of heart disease.

#### WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd St.
Detroit Branch: 736, 738 and 740 Woodward Ave.
Indianapolis Branch: 438 and 439 Indiana Pythian Bldg. Chicago Branch: 2241 Michigan Ave. San Francisco Branch: 243 Monadnock Bldg.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO



## Don't Be Left in the Rear Get Your Territory Now

Let one man equip his car with a labor-saving device as practical as the Kellogg Four Cylinder Motor Driven Tire Pump and the call for it spreads like wildfire.

This is just what has happened; the demand is tremendous from all parts of the country. Below is a list of cars which have included

### KELL OG Tire Pump

as part of their equipment:

The character of these manufacturers removes all doubt as to the merit of the Kellogg Pump and shows the demand to be too imperative.

We offer territory for the sale of the Kellogg Four Cylinder Tire Pump to live dealers.

You can earn big profits equipping your customers' cars with it —old or new.

### USED ON THE FOLLOWING CARS

Packard Winton
Peerless Havers
Lozier StevensDuryea Chalmers WillysFranklin Winton
Havers
Steams
Jackson
Chandler
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The Kellogg Four Cylinder Tire Pump can be installed readily to any motor by your mechanic or repair man.

Act quickly for desirable territory is going fast.

The demand is here—it is up to you to reap the revenue.

Get our dealers' proposition and full details.

We are rapidly establishing a chain of Service Stations reaching from coast to coast which will shortly be at your disposal in every important city.

FOLLOW THE LEAD OF THE MAN WHO KNOWS

Write for our interesting Literature, Dept. "W."

### KELLOGG MFG. COMPANY, Rochester, N. Y.

NEW YORK 1733 Broadway CHICAGO 1112 South Michigan Avenue SAN FRANCISCO 444 Market Street



## A Brown Tube

Here is the newest improvement in tire service for motorists.

Forty-four years of rubber man- ufacturing-seventeen of them in tire-making-natur-Goodrich Tires everything

ally give the motorist in science and skill can produce.

step ahead.

And now we give him dreamed about.

So we have taken the

the inner tube he has

We call it the Goodrich Indian of the cream of the finest rubber in the richest rubber country.

These Indians are a hardy, tough fibred, enduring race-

They run lightly, swiftly and silently-They are "best in the long run"-just like Goodrich Tires.

So it is appropriate that this remarkable new inner tube should be called "Indian."

You'll know it by its color-brown. It's Indian-brown.

You'll know it by its running qualities, its endurance, its strength.

Tube because it is made gathered by the Indians

It is distinctive; it is natural; it "clean strain" - it is Indian.

No motorist will judge it by its price. He will neither wonder nor worry what it costs when he sees it. He will take the Goodrich word for it that his money never before bought such an inner tube as this Brown Tube-the "Indian."

It will make more friends for every dealer who sells it.

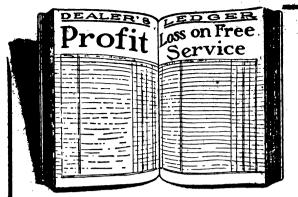
### The B. F. Goodrich Company



Factories: Akron, O. Branches in All Principal Cities



There is nothing in Goodrich Advertising that isn't in Goodrich Goods



# Which Page Do You Use Most?

Are Your Profits Eaten Up by Free Service Expense?

#### Experience!

From a Dealer's Letter Published in Motor Age, Jan. 29, 1914

"My own experience both on the road and in the garage business, has convinced me that the dealer or garage man who attempts to patch up electrical troubles for his customers is apt to discover that he is 'the goat' in the transaction, and he can save money and customers by declining this sort of repair work, unless the customer agrees in advance to pay the full amount of the bill, whether the repair is successfully made or not.

"I further believe that when the cost of electrical service is placed where it really belongs, either on the shoulders of the owner or of the manufacturer of the equipment, there will be a decided change in the public attitude toward electrical features." Did you notice the big crowds of live, wideawake, progressive dealers that surrounded and swamped the low-priced, light-weight, simple gas-lighted cars at the Shows?

They saw the light on the real road to dealers' profits.

The big ever-increasing army of automobile buyers is headed the same way—toward the gas-lighted car.

The sale of 5 gas-lighted cars will put more net profit in your pocket than the sale of 10 cars electrically equipped.

When you sell a Prest-O-Lited car, you put the commission in your pocket and it stays there. It is not eaten up by free service.

Free service is the only thing that keeps electric light alive today. The customer doesn't expect expense and won't stand it, and neither will the manufacturer. Both of them look to the dealer.

How long will the dealer stand it?

You went into business to make money, not to give it away.

The sales profit on an electric-lighted car, less the free service, usually means LOSS.

The sales profit on a gas-lighted car, plus the Prest-O-Lite exchanges, always means PROFIT.

### Here Is the Remedy:

Whatever car you are selling or trying to sell, take an agency for one of the lower priced, light-weight, gas-lighted cars.

This is the car 80 per cent. of the public

is buying. Next year it will be 90 per cent.

An agency for such a car, plus your Prest-O-Lite agency, means sales, satisfied customers and PROFIT.

## The Prest-O-Lite Company, Inc.

287 Speedway

(Contributor to Lincoln Highway)

Indianapolis, Ind.

## Why the Magnetic Speedometer is Accurate for Life—

and why all others are not

HE drive shaft of the centrifugal type speedometer revolves at 2560 revolutions per mile. At 30 miles an hour (quite an ordinary car speed) this shaft turns at the terrific and destructive rate of 1280 revolutions a minute-faster than 21 revolutions a second. THINK OF IT-In the instrument there is also a heavy lead weight, threshing around at the same high speed. This movement is transmitted to the pointer through a cumbersome link and cam device. High speed means wear. Linkage means lost motion and consequent inaccuracy.

## WARNER AUTOMMETER

The drive shaft of the magnetic type Warner Auto-Meter revolves at only 680 revolutions per mile, one-quarter as many as the centrifugal. It has no lead weight to whirl at 2560 revolutions per mile; no links and cams to move in addition; nothing but the magnet, and that at very low speed.

Only one part—the magnet—moves with the chaft. This magnet directly actuates the speed dial by magnetism. Nothing touches, rubs or grinds. There is nothing mechanical to wear. The dial itself turns without friction, in jeweled bearings, as in your watch.

The magnetic type Warner Auto-Meter is better able to endure high shaft speed, yet its shaft speed is far lower—75%.

No wonder it lasts longer.

No wonder it is accurate for life.

No wonder it has been adopted as standard equipment by over 95% of the makers of high priced cars.

You can have a Warner Auto-Meter on your car if vou insist on it.

#### Stewart-Warner Speedometer Corporation Factories: Chicago, Ill. and Beloit, Wisc.

Chicago, Ill. Cleveland, Ohio Detroit, Mich.

Direct Factory Branches Indianapolis, Ind. Kansas City, Mo. De Angeles, Cal.

Minneapolis, Minn. New York, N. Y. Philadelphia, Pa.

And 75 Service Stations

J-D plugs include the famous Reliance that "sparks in water"—\$1—for motorboats.

The "Visible Gap" that instantly locates ignition troubles—\$1.

The Conical and Petticoat, open or closed end—75 cents; or with sparking points of platinum-iridium—\$1.25.

Also a motorcycle special, porcelain, that has no equal for stability.

Dealers in any part of the world are assured of prompt deliveries. Write for the free Jeffery-Dewitt lists and literature.



If you don't know all about the J-D Spark Plugs and their method of manufacture and our satisfaction guarantee better get posted. A line brings full information.

JEFFERY-DEWITT COMPANY, 65 Butler Avenue, Detroit, U. S. A.





## has come into its own

The great increase in the number of electrics in use this year over a year ago is proof positive that the electric pleasure car has come into its own. Its greater utility is recognized at face value; likewise its greater dependability and economy.

Upon the crest of this wave of public favor rises the Detroit Electric. It leads all other electrics in point of numbers built and sold. Its sales are more than double the sales of any other electric.

Nor is the supremacy of Detroit Electric cars limited to any one city or any one section of the country. The steepest hills of Pittsburgh are no barrier. In New York, where you need a car of great flexibility, Detroit Electrics easily keep up with the procession. They dot the streets of Chicago, the greatest electric car market in the world, and a city of larger area than any other in America. And in Detroit, the automobile center, more Detroit Electrics have entered service in the past five years than all other electrics combined.

Detroit Electric leadership in sales goes parallel with Detroit Electric leadership in new features and in sheer intrinsic quality. It is the most logically designed and the best built of all electrics. In appearance, appointment, luxury and comfort, it establishes a rare, new standard among electrics.

New catalog, upon request, describing all the Detroit Electric models: Special worm gear axle or bevel gear axle; front seat drive, rear seat drive or Detroit Electric Duplex Drive.

## Anderson Electric Car Co.

Detroit, Michigan

Builders of the Detroit Electric

Largest Manufacturers of Electric Pleasure Vehicles



## S P R I N G F I E L D Convertible Bodies







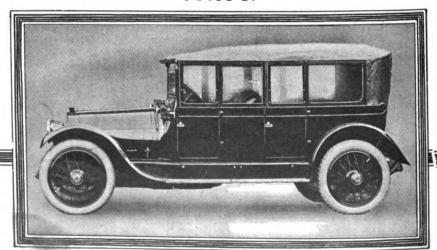
RDERS booked at the Shows—and the comment of those who inspected the Springfield Convertible Bodies indicate a healthy demand for the coming season.

Responsible dealers are urged to write us for our trade arrangement and to canvass their custom for Springfield Convertible Body business. Our arrangement is attractive enough to make it well worth your while and—as it has worked to the advantage of other dealers—why not you?

In New York, Chicago, and other large centers, the principal advantages offered by Springfield Convertible Bodies have induced many dealers and factory branch sales managers to equip one of their chassis with such a body for show and demonstration purposes.

Judging by orders received from such sources there is a growing demand for the convertible type body, for orders follow orders with clock-like regularity—bodies for imported and American chassis, for four and six cylinder cars of many sizes

## SPRINGFIELD METAL BODY CO. SPRINGFIELD MASS.





## The Electric Auto-Lite Company

"The Pioneer Makers of the 6-volt Electric System."

'TOLEDO, OHIO

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Branches:

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## →RUIDSON Six40←

## Think How Many Want a Six Like This

#### How Many Could You Sell?

A \$1,750 high grade Six. A 2,980-pound Six.

With a streamline body—ideal equipment—extra tonneau seats.

Less price, less weight, less operative cost than any same-class Four. And the handsomest car of the day.

The Automobile Shows have this year revealed the tremendous vogue of the Six. Eighteen makers showed Sixes exclusively, and 54 of them showed Sixes for best. This out of a total exhibit of 79 makers.

In 1905 there were 196 exhibitors at the New York Automobile Show. 68 showed either single or two cylinder cars. They said the same thing about the development of the Four then, as is now heard from some makers of Fours about the future of the Six. In 1907, however, not a single one or two cylinder motor was shown.

Men who buy cheap cars must still be content with Fours. But men who pay over \$1,500 will find everything—even price and weight and fuel cost—in favor of the Six. And thousands of such men buy cars every year.

#### All Bars Down

The new HUDSON Six-40 removes every bar which held these men from Sixes.

Sixes have been costly. Now the HUDSON Six-40 far outsells any comparable Four.

Sixes have been heavy. Now the HUDSON Six-40 weighs 400 pounds less than the HUDSON "37"—our last year's Four.

Sixes have used extra fuel. Now the HUDSON Six-40 consumes one-fourth less fuel than the HUDSON "37," which had less length and power.

This is mainly due to a new-type motor—a small-bore, long-stroke motor—first developed by European engineers.

## The Handsomest Car of the Year

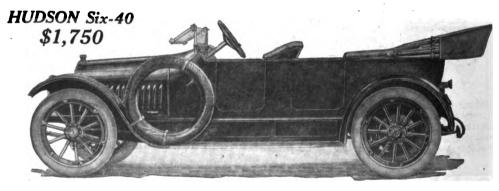
The HUDSON Six-40 also brings out an ideal streamline body, now the universal vogue in Europe where body styles are set. These flowing lines, here as in Europe, have displaced the angle dash.

Many new attractions—new ideas in equipment—are embodied in this car. In all these things the HUDSON Siz-40 is almost identical with the HUDSON Six-54. And these two cars are widely considered the handsomest cars of the year.

Both are designed by Howard E. Coffin, the famous HUDSON engineer.

The HUDSON Six-40 is the only quality Six selling under \$2,000. It is the most popular car which ever went from this factor?, Dealers to whom this car appeals should write at once about it.

Hudson Motor Car Co.
7797 Jefferson Ave. DETROIT, MCH.



Wheelbase, 123 inches.
Seats up to 7 passengers.
Two disappearing seats.
Left side drive.
Gasoline tank in dash.
Dimming searchlights.

Extra tires carried ahead of front ...door.
"One-Man" top, made of Pantasote.

Quick-adjusting curtains.
Concealed hinges.
Concealed speedometer gear.

Delco patented system of electric lighting and starting.
Integral rain-vision windshield.
Hand-buffed leather upholstery.
Electric horn—license carriers—tire holders—trunk rack—tools.

Price, \$1,750 F. O. B. Detrell.
Wire wheels, with extra wheel, gis
extra.
Standard Readster, same price.
Cabriolet readster, completely or
closed, but quickly changed to it.
Line \$1,900.

## A Co-partnership

WE are vitally interested in the success of Fisk Dealers, because their success means our success.

We are equally interested in the relations of Dealers and Consumers that both may be satisfied.

Fisk Tires and Tubes give greatest satisfaction wherever used. They are the best we can build, regardless of cost. We treat our dealers *right* and they, in turn, treat their customers *right*.

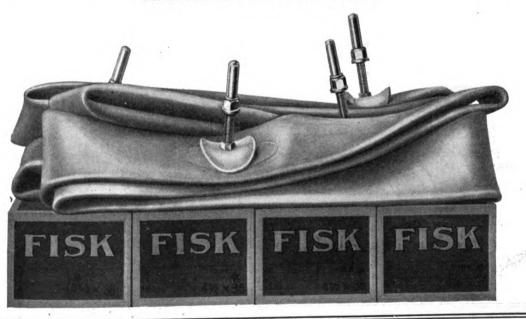
There's a place in this Fisk Co-partnership for live Dealer everywhere. Write Department 23.

#### THE FISK RUBBER COMPANY

Factory and Home Office:

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DISTRIBUTORS: THE FISK RUBBER COMPANY of N. Y.





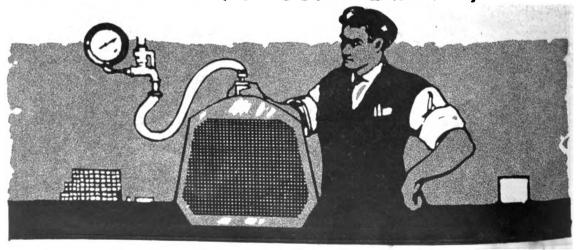
FEDDERS RADIATORS

Lanteed perfect as to workmanship and materials—ready and fit for service. One thing of vital importance in every radiator is absolutely water tight construction.

Fedders Radiators undergo three separate and distinct tests to insure this feature. These tests are made with the same painstaking care that is characteristic of every operation in building radiators and it is a rare occurrence when such complaint is lodged against a Fedders Radiator.

When a car manufacturer insists upon it we follow to the letter his plans and specifications both as to design and materials. We, of course, prefer that all our customers use Fedders Standards in all cases—in which event we know the ultimate user of the radiator will always get the finest kind of service from that part of his car.

FEDDERS MFG. CO. Buffalo, N. Y.



## A Moral **Obligation Fulfilled!**

\$1,750,000 was invested in a service for former Maxwell owners---this same insurance covers the 1914 Maxwell 25-4

YOU WILL CONCEDE—that any time a company invests one and three-quarters of a million dollars is zervice for former customers—it was only morally bound to protect—that concern has high business ideals. THAT'S EXACTLY WHAT THE MAX-WELL MOTOR CO. did when it absorbed the plants making the Brush, Courier, Everitt, Maxwell, Columbia, Stoddard-Dayton cars and the Alden-Sampson trucks.

WE DIDN'T HAVE TO DO THIS. We were in no manner whatever legally bound to do so. With the forming of the Maxwell Motor Co. (Inc.) the manufacture of the aforementioned cars ceased.

BUT THE SERVICE TO THE OWNERS did not stop. It cost us \$1,750,000 to see that these former customers got the utmost in service. It meant the turning over of our big New Castle plant, just when we needed it to supply the world-wide demand for the new Maxwells.

WE DID IT—We are doing it now. We are not speaking of our past—but of the present and the future. Those owners of cars made by the plants we acquired are now getting this service and will continue to get it as long as they want it.

IT 1S THERS FOR THE ASKING. The enormous New Castle, Ind., Plant of the Maxwell Motor Co. does nothing else but tend to the wants of our owners. It is along as they want it.

IT 1S THERS FOR THE ASKING. The enormous New Castle, Ind., Plant of the Maxwell Motor Co. does nothing else but tend to the wants of our owners. It is along satisfactory service ever devised by any concern.

YOU CAN'T EQUAL IT for location. The New Castle parts olant is situated in the

oughly satisfactory and concern.
YOU CAN'T EQUAL IT for location.
The New Castle parts plant is situated in the very center of the ownership of Maxwell, Brush, Courier, Everitt, Columbia, Stoddard-Dayton cars. The central supply point of

Maxwell service is just at the most 12 hours distant from the great majority of Maxwell

owners.

PROMPT SERVICE IN EMERGENCY
CASES means much to owners. It cuts down
the upkeep. You know that. If you don't,
ask any owner what Maxwell service would
nave meant to him in several instances. And
this service stays with Maxwell customers al-

ALWAYS? You say that's a long time. Well, it has been some time since the above mentioned cars ceased to be manufactured and their owners can get the most efficient service in the world by simply shipping his car to the New Castle plant for overhauling, or replace a part by ordering it from one of the Company's big service stations in the east, west or south if they desire instant service.

east, west or south it they desire instant service.

IF WE DO THAT MUCH for people we're not legally obligated to serve, what will we give you as a Maxwell owner we are bound to protect? The public knows what we have done and are doing. That's why we can't supply the demand for Maxwells.

PEOPLE WHO HAVE OWNED CARS and are buying again comprise the bulk of the Maxwell army. They know that this great company not only gives its owners the greatest service in the world but that it has equally great manufacturing facilities. They have heard the big men in the industry talk of the marvelous automatic, rapid, hair-line devices the Maxwell Motor Co. has for the making of its great automobiles. Appliances that other makers had only heard of but had never seen operate in the construction of the scientific automobile.

INFORMED BUYERS OF TODAY know that it would never be possible to make such a wonderful automobile as the Maxwell "25-4" and sell it for \$750 if it wasn't for aimost magical manufacture. They resige that even with these scientific devices the psice would have to be a \$1,000 or more for a Maxwell "25-4" if it wasn't for the quantity marketed. The combination of improved manufacture and enormous distribution makes possible a real automobile for \$750.

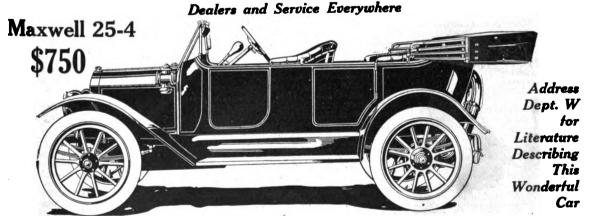
NOT ONLY A REAL ONE but the "biggest" real motor car in the world. It is conceded that the Maxwell "25-4" is deserving of that title. Not by mere size—but because of shere car value. "Biggest" because it will do bigger things than higher priced cars at less cost. There is the real reason why we can't make enough of these wonderful automobiles to supply the universe.

SO LIGHT THAT IT cuts the tire bills almost in half and yet so strong that it will stand up under the abuse the average owner will give it, the Maxwell "25-4" is the car that the big experienced buyers have been looking for. That is why they were so eagerly snapped up by the world. That is why you are going to get left if you don't get your order placed at once.

THIS WONDERFUL MAXWELL will bring premium prices before the summer demand is supplied and don't forget that. If you want to make sure that you get the "biggest" automobile in the world at a price never thought possible get in line right now.

WE COULD TALK ON forever and never convince you like one ride in this maryelous Maxwell will. Take that ride and then agree that we can't say too much about this great automobile.

## Maxwell Motor Co., (Inc.) **Detroit.** Michigan



A full five-passenger car of ample wheelbase and constructed in what might be called conventional design. Three-speed selective transmission, uniform size tires, standard type magneto. Motor cast "en bloc" with detachable heads. Water cooled thermo syphon system. Center control, left-hand drive, Prest-O-Lites, tire holder, windshield and top, and Jiffy storm curtains, etc.

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## The Cadillac Company has no intention of marketing a six cylinder car

THE Cadillac Motor Car Company has always believed that there are so many good features in the Cadillac Car, that its advertising space could be best utilized exclusively in acquainting the public with those advantages.

We regret, however, that the occasion arises which makes it appear desirable for us to depart, temporarily, from that

Inasmuch as it is not possible for us to control the "mouth to mouth" advertising with which we are favored, and inasmuch as that gratuitous publicity may sometimes contain elements of inaccuracy, unintentionally perhaps, on the part of the authors, we feel that we would not perform the duty which we would not perform the duty which we owe to the public and the duty which we owe to ourselves, if we did not correct any misunderstandings or misconcep-tions which may exist concerning the methods, policies and plans of this com-

The pre-eminent position of the Cadillac Car as the "Standard of the World," its recognition as the criterion of excellence in practical construction, are not matters of mere chance.

For eleven years the Cadillac has been manufactured and marketed upon well defined principles. Adherence to those principles has been the dominant factor in Cadillac success.

The Cadillac has never aspired to ideals set by others; it makes its own ideals and raises them higher and higher.

The Cadillac has never striven after the achievements of other plants; it is a school and a model unto itself. The Cadillac has never been obliged to

The Cadulac has never been coniged to make apologies for its product. It has never been obliged to smother its past, nor to discredit it by wiping the slate clean and beginning all over again.

the fad and the fallacy, the delusion and the shallow "talking point" have no chapter in the "Story of the Cadillac."

The "Story of the Cadillac" is the story

of that mechanical and commercial advancement which makes for permanency. The Cadillac product has been only that which its makers knew to be right; that which its makers know would satisfy and give to the purchaser "value received" in

abundant measure.

The policy of the Cadillac Company has ever been to avoid exaggeration and overdrawn statements. Its policy has ever been to under-claim rather than to

ever been to under-claim rather than to over-claim.

The Cadillac Company is gratified that the public feels secure in accepting Cadillac representations at their full worth. These representations are so accepted because the Cadillac Company has never misled and because the public could always expect and has always received more than was offered.

The Cadillac Car of today has behind it the experience gleaned in the successful production of the seventy-five thousand Cadillacs which have preceded it—by far the greatest number of high grade motor cars produced by any one manu-

motor cars produced by any one manufacturer in the world.

The Cadillac Company is ever alertits ear is ever to the ground; it feels the throb of the public pulse. Yet never has it yielded to clamor by giving endorsement to principles which would take advantage of the uninitiated or the uninformed, even though temporary benefits might accrue.

The experimental division of the Cadillac Company is not excelled in the motor car industry. We do not believe

it is even equalled.

Every design, every appliance, every idea, every principle offered which has a semblance of merit, is subjected to the most gruelling tests.

For every idea or feature adopted or considered worthy of the Cadillac seal of

one reason why most of the new ideas of inventors and manufacturers are

first offered to the Cadillac Company is because these inventors and manufacturers realize that with the Cadillac seal of approval their future is practically cer-

As an example, take the electrical system of automatic cranking, lighting and ignition, first introduced by the Cadillac Company and now used almost univer-

Take also the two-speed axle introduced into the present Cadillac, and which engineering authorities on both sides of the Atlantic are predicting will

sides of the Atlantic are predicting will soon come into general use.

Witness this from "The Automobile Engineer," published in London, England. In commenting upon Cadillac engineering progress and Cadillac initia-

tive, it says:—
"Already there is a very decided movement among other makers to try and provide some type of two-speed rear axle similar to the Cad-illac, for 1914 or 1915."

In our experimental division we have built automobile engines of almost every conceivable type and size and have tested scores which we did not make ourselves.

We have built them with one, with two, with three, with four and with six cylinders. We have never tried five.

We have cast them en bloc, we have cast them in pairs and we have cast them singly. We have made them with water jackets cast integral and with copper water jackets. We found the latter

Jackets cast integral and with copper water jackets. We found the latter method most expensive, but the most efficient—hence we use it.

We built cars with one cylinder engines, more than 15,000 of them, and they were good ones. "One-lungers" they were called, and they are practically all going yet after sight to eleganteer. all going yet, after eight to eleven years of service, hundreds of them having passed the 100,000 mile mark.

We built a few cars with two cylinder engines and they were as good as that type could possibly be made. But we never marketed any of them although the rumor was current that we intended doing a company to the country to the countr

doing so.

Yes, and we built cars with three cylinder engines, as good of that type as could be made. Probably few readers ever heard of such a car. Some people thought they wanted that kind and they bought them. But not from us. Rumor had it, however, that we intended to market them.

Cars with four cylinder engines! We have built and distributed more than sixty thousand (60,000) of them. That was something more substantial than a rumor.

Cars with six cylinder engines! We have built a number of them in the last four years. We have tested them to the four years. We have tested them to the utmost, and they proved to be good ones—by comparison. In fact, by comparing them point for point with a number of the most highly regarded "sixes," which we bought for the purpose of making comparisons for our own enlightenment, we failed to find a single car which in our opinion, outpointed our our own outpointed most of them.

These experiments may have given rise to the rumor that the Cadillac Company contemplates marketing a six cylinder car. But,—as in the cases of the two and three cylinder cars—such rumor is entirely without foundation. This Company has no such intention.

And we made other comparisons as well; in fact nothing worth while was overlooked or omitted.

overlooked or omitted.
Our tests, investigations, experiments and comparisons demonstrated conclusively to us, that a four cylinder engine, designed with the skill and execute with the precision which characterizes the Cadillac engine—and scientifically balanced, affords the highest degree of all 'round efficiency possible to obtain.
These tests further demonstrated that with such an engine, in conjunction with

with such an engine, in conjunction with a properly designed two-speed axle, there is obtained an extraordinary range of operating flexibility, an extraordinary reduction of friction, an extraordinary degree of operation and maintenance

degree of operation and maintenance economy, an extraordinary degree of luxurious riding qualities, and a reduction of vibration, particularly at high speeds, almost to the vanishing point.

We have cited the foregoing facts because we believe that the public is entitled to know them, because we believe that we owe it to the public to make the facts known and because we want the public to know that the Cadillac Company leaves no stone unturned, that it spares no expense in its efforts to discover and to provide that which it knows spares no expense in its emorts to up-cover and to provide that which it knows will satisfy and that which will give to the buyer "value received" in abundant measure.

And above all, the Cadillac Company has no intention of departing from that

There can be no better evidence of There can be no better evidence of the appreciation of the Cadillac policy than the fact that there have already been manufactured and distributed, more than 9000 of the 1914 Model Cadillac, amounting in selling value to more than eighteen millions (\$18,000,000) of dollar a volume of cars which nearly equals. a volume of cars which nearly equals, does not exceed, that of all other 1914 high grade American cars combined. 1914 high grade American cars combined. selling at or more than the Cadillac price, regardless of their number of cylinders.

CADILLAC MOTOR CAR CO. Detroit, Michigan.

## Is it a "Law of Nature"?

As long ago as the sixteenth century, only a few years after Balboa discovered the Isthmus of Panama, a project was broached for a canal joining the oceans. But the Church of that day frowned on it.

"If the almighty had intended men to go so easily from the Atlantic to the Pacific, He would have provided a passage," said those pious clerics. And for the time that ended it.

Mr. Motorist asks for an electric starter. It is produced—a beautiful mechanism, spinning top-like at 2000 or 3000 r.p.m., and geared down through a neat reducing train to the engine.

"It will spin your 4 x 5 engine at 70 r.p.m., using 100 amperes," says the maker, beaming. "Its maximum torque is three times the steady spinning torque, hence it will start the engine even when the oil is pretty stiff. The manufacturer of your next car can build the starter into the car, and with a 120 ampere-hour battery it will cost you only \$125 extra.'

"Fine!" says Mr. Motorist. "By the way, what is the efficiency of those gears?

"Well—er—we make it about 60 per cent. when everything is favorable," is the reply.

"In other words, my 100 amperes does me only as

much good as 60 amperes would without the gears?" "Yes. but--

"And the spinning speed with 100 amperes would be about 120 r.p.m. instead of 70, if it were not for those same gears?"

"About that, but-

"And the maximum torque for cold weather would be correspondingly greater?"

"True, but-

"Well, what's the matter with cutting out the gears and using that extra power where it will show results? For example, suppose I wanted to start off in a hurry. Couldn't I start the car and engine both, by having first speed in mesh, if it weren't for those 60 per cent. efficient gears?"

"Oh, my dear sir!" gasps the maker. "That isn't in the nature of a starter!"

has an electrical efficiency alone about 10 per cent. higher than that of the average starter. And, in addition, it has no intermediate gears—it meshes directly with the flywheel. Using the same current, it spins any engine 50 to 250 per cent. faster than any other starter made; and the maximum or stalling torque is twelve times the normal torque. Its action is perfectly automatic-the user only presses a button.

Yet, by reason of its extreme simplicity, it costs the car manufacturer from \$25 to \$50 less than other starters.

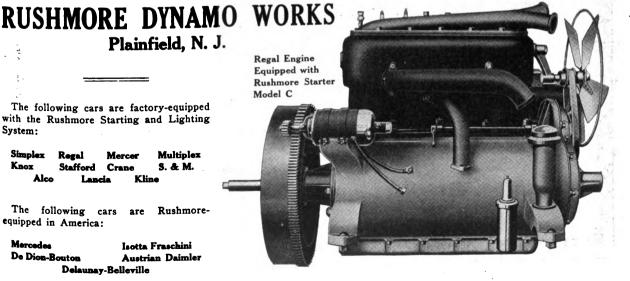
The following cars are factory-equipped with the Rushmore Starting and Lighting

Simplex Multiplex S. & M.

System:

The following cars Rushmoreare equipped in America:

Mercedes Isotta Fraschini De Dion-Bouton Austrian Daimler Delaunay-Belleville



## Give serious thought to your tire equipment for 1914

SINCE, the time has come to make choice of tires for the 1914 season, investigate the important advantages of Ajax tires, guaranteed in writing for 5000 miles. The Ajax guaran-

The Ajax guarantee now in its ninth year of successful operation, measures the higher in-built quality of Ajax tires.

With other standard makes having implied life of 3500 miles the advantage of Ajax tires is measured by 1500 miles or 43%. There is a saving of from \$4.00 to \$20.00 a

tire (according to size) in the purchase of Ajax tires. Why not get this extra service?

The increase in the Ajax business from year to year has come as users have expressed their Ajax satisfac-

tion to their friends, and so the circle grows wider and wider.

Ajax tires, too, are on all four wheels of cars of Ajax tire purchasers—not a motley collection of hy-

brid makes, for Ajax users have solved the problem.

The demand for Ajax tires always exceeds the supply, and this in spite of important factory extensions in each year, and continuous, uninterrupted factory activity without curtailment of the working force, 24 hours daily (Sun-

days excepted) since February, 1911.

Investigate Ajax tires! Know that their higher quality is in-built! Decide now on Ajax tires for your 1914 equipment. Write for new Ajax booklets.

## AJAX TIRES

Guaranteed

(in writing)

5,000 Miles

While others are claiming Quality
we are guaranteeing it"

## AJAX-GRIEB RUBBER COMPANY

1796 Broadway, New York

Branches in Loading Cities.

Factories, Trenten, N. J.

"Hyatt Quiet" is a phrase that represents the utmost in bearing service to motorists.

The "care free" service and quiet satisfaction rendered by Hyatt Roller Bearings, are due to—the basic principle of the bearing—the quality of the raw materials—their rigid inspection—scientific heat treatment and high grade of workmanship employed throughout.

Two books, one about motor ear bearings in general for prospective purchasers, the other for automobile owners, will be sent on request

"Hyatt Quiet Bearings"



HYATT ROLLER BEARING CO.

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leather binding, rounded corners and gold-edged pages-beautiful, while being intensely practical.

It will be to your immediate financial advantage to acquire an intimate and practical knowledge of cars and their parts. Lack of knowledge is expensive.

We want every reader of Motor World to have a de luxe copy of "The Automobile Catechism." To make our offer irresistible we have decided, FOR A LIM-ITED TIME ONLY, to CUT THE PRICE IN TWO. This half price (\$1.25) will prove the best investment you ever made. Remember, this is the de luxe edition—264 pages—every page full of real, money-interest

Put your name and address on the corner coupon, tear from the page, enclose \$1.25 and mail today to-

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MOTOR WORLD PUBLISHING

1600 Broadway, New York City.

Gentlemen:

Enclosed please find \$1.25. for which send me a copy of "The Automobile Catechism" (de luxe edition).

Address

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## Have you observed the increasing use of battery ignition?

## Westinghouse Ignition Is Battery Ignition

with the added advantage of "Magneto-Type" Interrupter and Distributor. Study the illustrations below.

Automatic control of spark is Westinghouse practice. Note the two positions of interrupter contacts—at rest and high-speed.

Westinghouse Ignition and Lighting is combined in one machine—weight 35 pounds. The ignition coil is an integral part of the generator. This reduces the inductance and results in longer life of the contacts.

## Westinghouse Electric & Mfg. Co.

#### To Dealers and Repair Shops

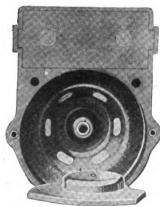
Send us your name and we will mail you a complete set of instruction books on Westinghouse Electric Starting, Lighting and Ignition Systems, and place your name on our mailing list to receive new instruction books as issued.

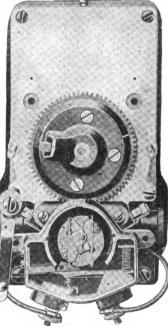


Showing Position of Interrupter Parts at High Speed

Automobile Equipment Division EAST PITTSBURGH, PA.







Ignition and Lighting Generator with Distributor Plate and Interrupter Cover Removed

## **Enduring Quality Proven**

The persistent, constant and strenuous stresses of race track speed prove the superiority of New Departure Ball Bearings.

Thirty-nine winnings, twenty-six seconds and eleven thirds, over a total of twenty-eight other motor cars, including foreign racing models, is the story of the New Departure equipped Mason Car the past season.

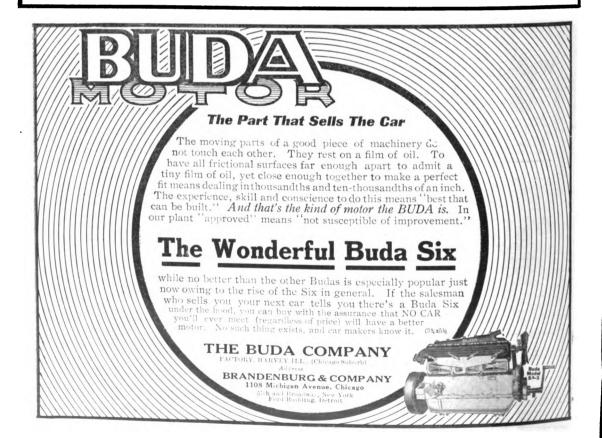
The American-made New Departure is guaranteed. Literature on request. Special Cyclecar data will be sent

if you are interested.

#### The New Departure Manufacturing Company

Bristol, Connecticut

Western Branch: 1016-17 Ford Building, Detroit, Michigan





## BOSCH



B OSCH PLUGS not only will sell themselves---they will give an added quality reputation to your entire line.

Bosch Plugs in 1914 are being made more popular than ever---they are the most advertised of quality plugs. Bosch Plugs are and will be extensively advertised FOR the dealer in over a score of trade magazines, and the best national magazines.

Whoever reads will be reading quality arguments, will be learning to choose good workmanship and materials rather than low price; in consequence more motorists than ever will be influenced in favor of Bosch Products.

Get "hitched up" to a quality line---it sells with minimum effort and gives a legitimate profit---that's the ideal line.

Write for details.

Over 150 Basch Service Stations are now operating in United States and Canada

#### BOSCH MAGNETO COMPANY, 224 West 46th Street, New York

Chicago

Detroit

San Francisco

Toronto



## "WHITNEY" KEYS

fa-

#### "The Woodruff System of Keying"

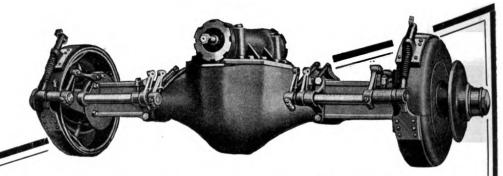
"Whitney" Keys are packed in boxes containing 100 assorted sizes, selected especially for the benefit of the repair trade.

Every garage and repair man should have a box of these assorted keys on hand. They cost little and are very convenient. They may be purchased from the leading jobbers of automobile supplies or we can supply same promptly from the factory.

#### THE WHITNEY MFG. CO.

Manufacturers of

High Grade Driving Chains. Keys and Cutters for the Woodruff System of Keying
Hand-Feed Milling Machines



## Do You Know What Sheldon Worm Drive for 1914 Means?

IT MEANS A MORE POWERFUL TRUCK because there is only a single reduction-little power is

lost in transmitting the power from the motor to the rear axles.

IT MEANS A SILENT TRUCK—fewer parts are required for its construction, and these are enclosed

and work in oil.

IT MEANS AN UP-TO-DATE TRUCK—Today the demand is for the thoroughly proved worm drive.

IT MEANS AN UP-TO-DATE TRUCK—Today the demand is for the thoroughly proved worm drive.

IT MEANS AN EFFICIENT TRUCK because it receives its power direct from the motor and is made if MEANS and EFFICIENT TRUCK because it receives its power direct from the motor and is made of less parts than any gear-driven axle. This axle unquestionably delivers the maximum power to the wheels, and they move the truck.

And finally it means better service to the owner—and increased sales for the manufacturer.

And finally it means better service to the owner—and increased sales for the manufacturer.

ADON'T JUDGE A WORM DRIVE TODAY BY WHAT YOU KNEW OF IT FIVE OR TEN YEARS AGO. THE SHELDON WORM DRIVE FOR MOTOR VEHICLES HAS MORE THAN KEPT PACE WITH THE RAPID STRIDES OF THE INDUSTRY ITSELF.

Write for detailed information.

### SHELDON AXLE COMPANY, Wilkesbarre, Pa.

Chicago Branch 68 E. 12th St.

Detroit Branch 1215 Woodward Ave.

The logic of advertising to the dealer first, most and all the time, has been the foundation of nearly every successful advertising campaign conducted in the automobile business

The dealer is a wholesale buyer, either directly or indirectly, of ever meritorious product.

The dealer is more potent in moulding public opinion as to complete cars or accessories than any other individual in the industry.

Motor World Is the Dealer's Favorite Trade Paper

#### Motor World Publishing Company

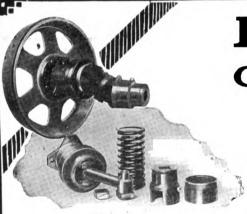
1600 BROADWAY, NEW YORK

W. H. TRIPP, Western Adv. Mgr. 1001 Ford Bldg., Detroit

B. MATHEWSON, Adv. Mgr. 1600 Broadway, New York







Let us solve your clutch problems

It pays to know that the CLUTCH — the most frequent point of contact between driver and car — is absolutely right. No guesses. No "ifs."

We are CLUTCH

specialists. Give us a chance to figure on your CLUTCH problems. We invite you to get in touch with us now—
True, you may not be ready to place your order—

But now is the time to "make assurance doubly sure" by writing us fully in regard to your requirements. Concerns who appreciate the better quality of workmanship will find that KONIGSLOW gives a CLUTCH and a SERVICE worth tieing up to. Write.

The Otto Konigslow Mfg. Company
CLEVELAND







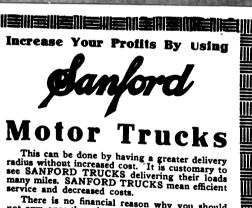
## Ignition Service

It Doesn't Matter what brand of ignition your automobile is equipped with-SPLITDORF SER-VICE is AT YOUR COMMAND. The whole SPLITDORF organization is YOUR FRIEND -we want EVERY user of a hydro-carbon engine to be OUR FRIEND. We'll leave no stone unturned to bind the friendship with TRUE SERVICE.

Call upon our nearest Branch Manager if you have ignition troubles—he'll advise and help you without delay. He's there for the purposeyou can depend upon him treating you right.

#### SPLITDORF ELECTRICAL COMPANY

ATLANTA, 10-12 E. Harris St. BOSTON, 180-182 Mass. Ave. CHICAGO, 64-72 E. 14th St. DETROIT, 972 Woodward Ave. KANSAS CITY, 1823 Grand Ave. EXATTLE, 1628 Broedway. LOS ANGELES, 1226 S. Olive St. NEWARK, 290 Halsey St. FACTORY: NEWARK, N. J.



There is no financial reason why you should not own one; there is every business reason why

THE SANFORD MOTOR TRUCK COMPANY W. Fayette Street, Syracuse, N. Y., U. S. A.

EXPORT DEPARTMENT York City, U. S. A. F. T. SANFORD AUTOMOBILE CO., 481-483 Park Avenue Distributors for New York City

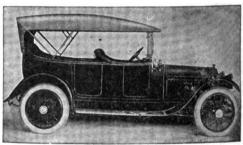
1 ton Chassis and Driver's



1½ ton III Chassis and Driver's

#### TOP MAKERS

Get busy at once and be prepared to furnish



to your customers. A big money maker. Write at once for agency proposition.

SHARRER PATENT TOP CO., Inc.

247 West 55th St., New York



Dealer Selling-Helps on No-Shammy Funnels

#### A Necessary Part of the Equipment for Every Motor-Car

Impress upon the owner that he can be absolutely



Operation of the No-Shammy Funnel

No-Shammy Funnel
DOUR the gasoline into the
large pocket. The water
and dirt contained therein, being bearier than gasoline, will
sink to the bottom. The pure
gasoline will rise and pass over
through the gauze near the top
of flow, uncertain separation or
replacement, as when chamols
or ordinary screen is used. Substantial sheet-steel construction,
heavily copper-plated to prevent
corrosion, makes it far superior
to that of the ordinary funnel.
Permanent wire-gauze.

Three Sizes: Garage,
Auto and Motorcycle

sure of clean gasoline, free of all water and dirt, wherever he may happen to be.

Investing two or three dol-lars in a No-Shammy Funnel and insisting upon its use whenever the tank is filled, is the only guaranty that all water and dirt will be removed.

It occupies very little space, and since a funnel of some description must be used-why not a "No-Shammy"?

If you are not yet familiar with this money-making device, write for trade-proposition, prices and discounts.

The No-Shammy Products Co. O. C. FOSTER, Sales Direc Hippodrome Bldg., Cleveland, Ohio



#### \$365.00—THE MOTOKART— \$365.00

PRODUCTION GOVERNS COST and upon organization we adopted a fixed policy of at all times regulating our list PRICE by actual shop cost. The popularity of the MOTOKART, the volume of orders already booked have rendered possible a cost which enables us to announce a new list figure—\$365.00. A PSYCHOLOGICAL FIGURE, MR. DEALER. A selling talk, A DOLLAR A DAY FOR A YEAR.

Don't forget that THE MOTOKART IS NOT A CYCLECAR, it is not a miniature pleasure car converted to commercial usage, it is the only car of its type embodying a four-cycle water-cooled engine built exclusively for commercial purposes. A chassis ideal for pleasure usage can never successfully be made the basis for a delivery car, the difference in requirements is too radical. We know nothing about pleasure cyclecars, but have devoted ourselves exclusively to the purpose of producing the best possible parcel delivery car at a universally acceptable price.

The MOTOKART'S field of usefulness is unlimited. Live dealers can demonstrate that it will increase the yearly profits of any storekeeper or merchant who has moderate size and weight merchandise to deliver. Agency applications for unoccupied territory are solicited from men who recognize the coming possibilities of the parcelcar wagon.

TARRYTOWN MOTOR CAR CO., Inc.

TARRYTOWN MOTOR CAR CO., Inc.

General Offices: 1790 Broadway, New York City cfory : Tarrytown, N. Y.

Address all correspondence New York Office

#### IF YOU ARE INTERESTED == IN =

#### **MOTORCYCLES**

THE BICYCLING WORLD AND MOTORCYCLE REVIEW

WILL INTEREST YOU

PUBLISHED EVERY TUESDAY AT 1600 BROADWAY, NEW YORK

TWO DOLLARS PER YEAR SPECIMEN COPIES GRATIS

### Look to your Tires

**V**OU can take a thousand miles of service out of a set of tires by driving them insufficiently inflated over ten miles of road.

### The New Positive Lock Stop Twitchell Air Gauge

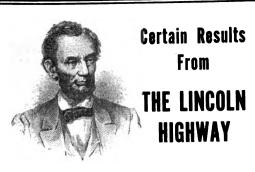
Insures you against premature wearing out of tires.

It is TIRE INSURANCE FOR ONE DOLLAR



For Sale by Jobbers, Dealers, Garages or

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Do you want cheaper hauling of farm products?

Do you want a lower cost of vegetables, meats, everything that goes on your table?

Do you want a more prosperous land to live in?

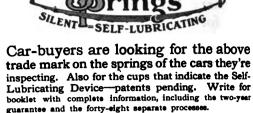
If you want any of these things you want Good Roads, and in all the agitation for good roads there has been no movement that carries with it so much of promise for the immediate future as this Lincoln Highway.

Send your contribution to this patriotic cause TODAY.

#### Lincoln Highway Association Detroit, Michigan

Space contributed by Motor World.

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Detroit Steel Products Co., 2258 East Grand Boulevard, Detroit, Mich.

#### LEECE-NEVILLE Starting and Lighting System 100 Per Cent. Efficient

A time test in actual service tells the quality story. If it's quality you want, get the story of the Leece-Neville System in operation on a Haynes car.

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(18)







will remove ALL carbon to-cylinders. Easily and in few minutes. Equal of any high-priced outfit. All parts guar-anteed. Keeps up efficiency of cars and trucks. BIG MONEY MAKER for garages.

Price \$10 (Without Oxygen Tank)

Usual price \$15. As we sell for cash only and no accounts carried, customers are given as companies allow inspection—you cash with order or C. O. D. \$5.00 off on every outfit. Express take no chances. Sent prepaid—c OXYGEN DECARBONIZER COMPANY, 301 RIVER ST TROY, N. Y.

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#### Complete Line of Commercial Vehicles

All type bodies—special bodies designed. Unexcelled for service, efficiency and economy. KisselKar Trucks have great reserve power. Low fuel cost; sizes to give most economical service under all conditions.

[1500 lbs. 1, 1½, 2½, 3½, and 6 Tons

KisselKar Service Buildings at principal points throughout the U. S. are equipped to give an unusual service to owners of KisselKar Trucks. Let us analyze your haulage problem and show you how to make a big saving.

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Priming cup soldered in firmly to prevent leaking.

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Terminals as shown furnished with every Plug.

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64 Canal St., Dayton, Ohio America's Leading Manufacturors of

#### Electrical Equipment

Electric Lighting and Starting Systems for Automobiles

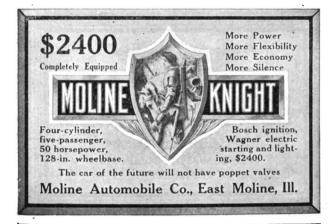
Electric Lighting and Starting Systems for Motor Boats.

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Trucks and Tractors.

Electric House Lighting Outfits. Golden Glow Headlights. The Famous Apelco Storage Batteries.

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if at any time it does not give you entire satisfaction. The Empire Gasoline Economizer is an instrument attached to your intake manifold. It is the "watchdog" of the carburetor; the sentinel of the gasoline supply. It will save from 20% to 80% of your gasoline bill; keeps carbon out of the cylinder, and prevents overheating of the motor.

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The car that started the stampede to standardization

A Cole franchise is a valuable asset to any dealer. Find out about it.



Cole Motor Car Co. of Indianapolis





NORDYKE & MARMON CO. INDIANAPOLIS (ESTABLISHED 1851) INDIANA





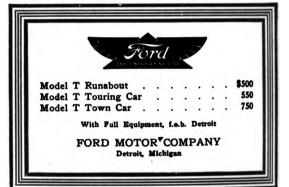
A big, strong, powerful car, having all those re-finements and up-to-date features that make the Cartercar a continual source of pride and satisfac-tion to the owner.

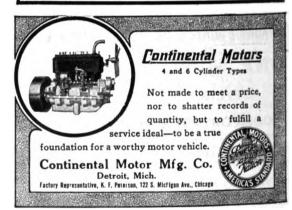
The Cartercar Gearless Transmission insures the utmost ease in handling with no jerking or jarring clutch and clashing or stripping of gears.

Built in various body types \$1250—\$1700—\$2000 CARTERCAR COMPANY, Pontiae, Michigan

All prices F. O. B. Detroit

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Plant including equipment, machinery, supplies and merchandise, is to be sold under a decree of the U. S. District Court. This large plant, fully equipped, and having superior railway facilities, is now in active operation and has built up a large business in Fire Apparatus, Tractors and other lines.

Full particulars may be obtained by addressing C. G. Gardner, Trustee, Knox Automobile Company, Springfield, Mass. Meanwhile we are prepared to supply a large variety of pleasure cars, fire apparatus and tractors to those desiring the highest quality.

#### Metal Products Axles

have been used for years in several well known makes and exclusively in two of the most popular cars on the market.

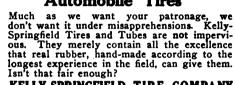
Built in standard types and to specifications.

Deliveries as you want them.

Let us quote you prices on your 1914 contracts.

METAL PRODUCTS COMPANY DETROIT, MICH.

#### Kelly-Springfield Automobile Tires



KELLY-SPRINGFIELD TIRE COMPANY

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Rubber Ch., Dessey, Colo.
Rubber Ch., Dessey, Colo.
Rubber Ch., Dessey, Colo.
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#### Shock Absorber

Only spring shock absorber made that is adjustable to any load. Slight turn of your wrist tightens or releases tension of shock absorber apring. Thus adjusts your shock absorbers to changes in weight of load. Easy to operate. Adjustments made in a minute's time. Remains in same position until changed.

The Coxajusto is a real shock absorber. Secures genuine comfort in riding and a saving of wear and tear on your car and tires. It will pay you to send for full information.

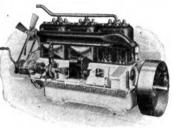
COX BRASS MANUFACTURING CO., 'ALBANY. Branches: 1777 Broodway, N. Y. ett., 3445 Michigan Ave, Chicago, III 870 Woodward Ave., Betroit, Mich., 1216 Van Ness Ave., San Francisco

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Manufactured since 1901 for high grade AUTOMOBILES and IRUCKS

3¼ x 5¼ four and six cylinder, 4½ x 5½ four and six cylinder Standard or Unit, and 4 x 4, 4½ x 5 and 4½ x 5 Standard Types. All L Head 4 Cycle.

The Rutenber Motor Co. MARION, INDIANA



## The New Process Gear Corporation

Out Gears of Quality **Complete Differentials** 

NEW PROCES

The New Process Gear Corporation

### The Atwater Kent Ford Ignition

assures perfect synchronization at all speeds; eliminating preignition and overheating-starts easily with a quarter turn of the crank and frequently without cranking by means of the starting button on the coil. It will, in addition, wonderfully increase the power, speed, flexibility and hill-climbing ability of the Ford car and is easily installed without any necessary machine work.

Write for Booklet "D" and prices.

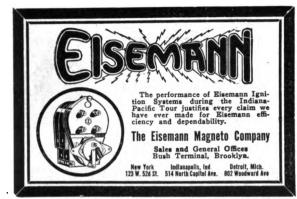
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Any Kind Rind Ring Clincher Q. D. Stock, or to Blue Print Ring Channels

For Automobiles, Motor Trucks, Aeroplanes, Motorcycles, Bicycles.

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R. B. ABBOTT SALES CO., Sales Agents, Detroit

## Quick Detachable and Demountable Rims

Our new and improved manufacturing facilities insure quality products and prompt deliveries in large or small quantities.

Jackson Rim Company
Jackson, Mich.

GOOD YEAR

This name on Automobile Tires and Rubber Accessories signifies inherent qualities of material and workmanship that insure the maximum of service at the minimum of expense.

THE GOODYEAR TIRE & RUBBER CO.

(479)

Why should the auto business be different from any other business? To my mind it is not, and the sooner it gets down to a horsesense basis the healthier it will be. The day when it was a "game" is gone. The red fire and hurrah period is past. And the companies which stay in are the ones which are going to adopt a hard-headed, closemargined, business-like policy.

Ewanstel

President of THE LEXINGTON-HOWARD CO.

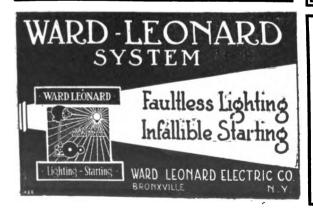
Manufacturers of Lexington "Four," \$1335, and the
Howard "Six," \$2375, Connersville, Indiana.

## Triplex Engine Starter For Ford Cars

Mechanical, durable, simple and efficient. 100 per cent. uninterrupted service from the time it is attached.

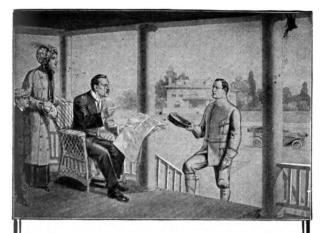
Write for particulars regarding dealer arrangements.

UNIVERSAL MANUFACTURING CO. RACINE, WIS.





LEWIS SPRING & AXLE CO., Jackson, Mich.



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"I know you are a careful driver, but it is best to adopt every device to prevent accidents.

"I can't afford to take any chances. We have all foolishly depended on rubber alone long enough. It's time to awake to our responsibility. So go at once and buy a complete equipment of Weed Chains and never start out without them when the roads or pavements are slippery or greasy."

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Insure Against Anxious Moments



Probably no other device has done so much to raise the factor of automobile safety as WEED CHAINS. They are the proverbial "ounce of prevention" against skidding, the cause of over ninety per cent of all automobile accidents— Life Insurance and Accident Insurance Companies strongly endorse them and recommend their use. Taxicat Companies, for their

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#### **Increasing Demand**

for WEED CHAINS makes them the most profitable Automobile Accessory handled by Dealers—Quick and Steady Sales—No Dull Seasons—No Dead Stock—Easily Handled—Liberal Profits—Universal Satisfaction.

Attractive, convincing, decorative, lithographed hangers supplied to dealers upon request.

At all dealers selling Auto Supplies

Weed Chain Tire Grip Company 28 Moore Street, New York, N. Y.

Manufactured for Canada by Dominion Chain Company, Limited; Main Office, Suite 801 Shaughnessy Bidg., Montreal, Canada



## Stop the Holes and Save the Tires

A little hole neglected soon becomes a big Blow-Out and in many cases blow-outs result in very serious accidents.

The safest way is to keep your tires in good condition with a Shaler Vulcanizer and prevent punctures, blow-outs and accidents.

## SHALER Vulcanizers

save repair bills, treble your mileage and free you from annoyance and worry of tire trouble. Get a Shaler Vulcanizer and keep your tires in good condition-all the time. It pays to do so.

#### More Shaler Vulcanizers Are Sold Than of All Other Makes Combined

They are used by the best garages and repair Shops everywhere. We are the largest manufacturers of vulcanizers in the world—and make the only complete line of Vulcanizers—which includes every type—Electric—Gasolene—Alcohol and Steam, for every requirement. Shaler Safety Vul-Kit \$3.50—Shaler Model D for Motorists' use \$12.50—Complete Shaler Vulcanizing Plant (for Garages and Repair Shops) \$60.00. \$60.00.

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which is brimful of practical suggestions and information about automobile tires. It tells what to do for every kind of tire trouble and how to vulcanize and repair your own tires at home.

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(Largest Manufacturers of Vulcanizers in the World)

Canadian Distributors, John Millen & Sons. Limited, Toronto, Winnipeg,
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FOR SALE—Garage, 36 x 90 ft. Lot 72 x 110 ft. A good business. Reason for selling, poor health. Will require about \$5,000 to buy. A \$15,000 stock of cars and gas engines which can be sold on shares. Address owner, L. A. KEENE, Waterman, De Kalb Co., Ill.

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Try our new idea cut-out, for bad
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\$50.00 to \$175.00. Carbon remover with each welder. Your credit is good with us. The welder pays for itself and you save the middleman's profit. Write for terms. Address MANAGER, DEPT. H, BERMO WELDING APPARATUS CO., Omaha, Neb.

PEERLESS EXTRA FINE BLACK BAKING JAPAN. For brass, nickel or iron. Bakes to a high gloss finish that will not crack, chip or peel. Solid covering one coat, without a primer or undercoat. THE COLUM-BUS VARNISH CO., Columbus, Ohio.

FORD Racing Type Bodies, we build them in several models. Also Hoods, Seats, Tanks and Fenders. AUTO SHEET METAL WORKS, 1530 S. Michigan Ave., Chicago, Ill.

RACING BODIES—We make them to fit any car. Seats, special and stock sizes; Radiators, Hoods, Tanks and Fenders. AUTO SHEET METAL WKS., 1530 S. Michigan Ave., Chicago, Ill.

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A market place where Dealers, Jobbers and Manufacturers may buy, sell or trade used cars, parts and appliances and where help or situations may be secured at a nominal cost.

GET List of Automobile Registrations direct from State House. Quickest and best daily service. \$45.00 for entire year, or at rate of \$4.00 per month. Special lists of all kinds promptly compiled. PETER DONNELLY, Box 180, Albany, N. Y.

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Send for sample page and get list from reliable party right in Trenton. Daily service only \$100 for entire year 1914. H. J. TINDALL, 47 W. State St., Trenton, N. J.

PEERLESS CYLINDER ENAMEL.
A black gloss finish not affected by grease, heat or gasoline. Keeps the engine clean and the metal parts from rusting. THE COLUMBUS VARNISH ing. THE COLUM CO., Columbus, Ohio.

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Owners or dealers; any state, county or city; weekly and monthly supplements at lowest prices. Special lists of Electrics, Trucks, Fords, Studebakers, Overlands

lands, etc.
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TO LET—The repair department in a first-class garage, machinery included, having the agency for Ford, Overland and Cutting cars. An up-to-date garage, a large repair business and great opportunity for the right man. BATH GARAGE COMPANY, Bath, Maine.

A UTOMOBILE Cylinders reground, new pistons and rings fitted. Garage air compressors. CAST IRON BRAZ-ING CO., Manchester, N. H.

A RE YOU in need of any additional help in any department of your busihelp in any department of your business? Are you out of employment or looking for a better connection? Have you second-hand apparatus of any kind or do you want to buy second-hand material? Have you a factory site for sale or do you want to buy one? If so, use the Want and For Sale column of the Motor World. Six words to the line, fifteen World. Six words to the line, fifteen cents a line. Advertisements can be inserted over a number when it is desired and identity of the advertiser will be kept confidential.

PEERLESS LEATHER TOP DRESSING.

A renewer and preserver of all old leather, rubber and pantasote tops and curtains. A fast black color that will not fade or wash off. THE COLUMBUS fade or wash off. THE COLU VARNISH CO., Columbus, Ohio.

ROKEN CRANKSHAFTS, cylinders, Crankcases, flywheels, gear teeth, pitons, perfectly welded and machined ready to replace. Guaranteed and references. Machinery up to 5 tons welded. ATLAS WELDING WORKS, 74-76-78 Irving St., Rahway, N. J.

S PECIAL—Moon 5-passenger touring car, electric started, lighted, 1913 model, 39 H.P., carefully used 3 months as demonstrator. Just as good as new, in style, and will please. Bargain, \$1,150. Going out of business. VICTOR AUTO SUPPLY CO., Waterman, Ill.

WELDING Plant, Cutting Plant, Carbon Removing Outfit, or a combination of all of these at from \$15.00 to \$175.00 for high or low pressure system. For full particulars address BERMO WELDING APPARATUS CO., Omaha, Neb. Neb.

PEERLESS MOHAIR TOP
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Makes old, faded, water and grease
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Leaves the cloth soft and pliable. THE
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These columns offer you an opportunity to appeal to an audience of 8,000 readers whose merchandising taste is being cultivated weekly to the highest degree by our articles on "Wide Awake Merchandising."

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is exceedingly easy-riding and comfortable. The straight line low alung body, deep upholstery and luxurious appointments of the Sturdy STUTZ give it that aristocratic design which lends dignity and quality to a high class motor car. Write today for advance booklet A-15 Sturdy STUTZ Announcement.

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Screwed in spark plug hole. ONLY 5 INCHES
HIGH. Metal piston rings, handle, noiseless.
Guaranteed equal to any \$15 pump on the market. Dealers write for full information and discounts. Without gauge, \$8.50, with gauge, \$9.50

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Your Car as Good as Its Axles Hess Axles Make a Good Car Enough Said

HESS SPRING & AXLE COMPANY, Cincinnati, Ohio

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OF EVERY DESCRIPTION

Samples and Prices on Request

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Makes the Best Oil or Grease a Better Lubricant

Send for "Lubricating The Motor" No. 23

Made in JERSEY CITY, N. J. by the Joseph Dixon Crucible Co.





Emil Grossman M'1'g Co., Inc.

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U. S. A.

Betroit, 844 Woodward Ave., Betroit, Mich.

Magneto Plugs coax the maximum power out of the engine

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Motor World Publishing Co., 1600 Broadway, New York

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A tire filler 10 to 20 per cent. lighter than any other tire filler. A big proposition for dealers who are on the alert for more and better business. Write for details.

AMERICAN KUSHION KORE TIRE CO.
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For anything in sheet metal that goes onto an automobile ask the

#### HAYES MANUFACTURING COMPANY

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Stand Alone — In a Class by Themselves

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Pennsylvania Rubber Company

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#### **METZ "22" ROADSTER \$475**

The "gearless car"—no clutch to alip, no gears to strip—completely equipped, fully guaranteed. 4-cylinder, 22½ H.P. water-cooled motor. Bosch magneto, artillery wheels, best quality clincher tires. Makes \$ to 50 miles per hour, 28 to 32 miles on 1 gallon of gasoline. Great hill climber. You can secure EXCLUSIVE SALE in your territory. Write for Book "B."

METZ COMPANY, Waltham, Mass., U. S. A.

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"The Speedometer of Absolute Accuracy"
Write for Catalog

The Corbin Screw Corporation THE AMERICAN HARDWARE CORPORATION, Successor

New York Chicago

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SKID



## "MY NEW CAR WAS EQUIPPED WITH AN 'ELECTRIC HORN'

I have just found out that 'electric horn' does not mean Klaxon.

When I first took my car out I drove it thru the city streets. I tried the horn. It made a little buzzing sound. Even though I sounded it repeatedly, I couldn't make any one hear it until I was almost on top of him.

I nearly ran down some children who were playing in the street. The horn was practically of no use.

When I got home I tried to find out what kind of a horn it was. It was hidden under the hood. It had no name plate.

Yesterday I got a Klaxon. I know now the difference between that 'electric horn' and a Klaxon. Some people may object to the unpleasant noise that the Klaxon makes. But I don't want to play music. I want a signal that will always be heard—that will really warn people and get them out of the way safely.

The Klaxon does it as nothing else can."

Excerpt from letter from Mr. C. S. Trowbridge of Montclair, New Jersey.



Lovell-McConnell Mfg Company Newark, N.J., U.S.A.



"The Public Safety Signal



KLAXON



Why should a buyer pay \$1500 or more for a "Four" when \$1575 brings him the superb sevenpassenger Studebaker SIX?

Why should he pay more for a "Six" when the Studebaker SIX brings him each and every advantage of six-cylinder design?

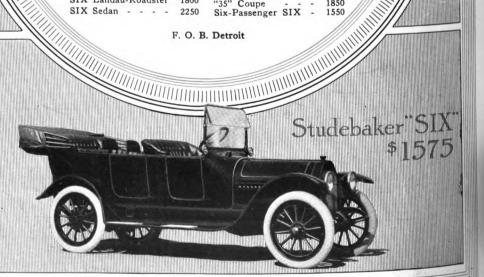
These are the pertinent questions the Studebaker SIX asks.

They ought to make plain to you the unassailable position of every Studebaker dealer.

#### Studebaker

#### Detroit

FOUR Touring Car -	\$1050	"25" Roadster	-	\$ 875
SIX Touring Car	1575	"25" Touring Car	-	885
SIX Landau-Roadster	1800	"35" Touring Car - "35" Coupe		1290 1850
SIX Sedan	2250	Six-Passenger SIX	-	1550



# MOTOR WORLD

A Trade Paper Giving the World's Motor News

Vol. XXXVIII No. 10

New York, February 26, 1914

Ten cents a copy Two dollars a year

Digitized by COOQ (C



Not only has the Pierce-Arrow turned the tide of imported cars so that there are today far less in proportion than some years ago—not only that, but the Pierce-Arrow in American hands has invaded Europe, giving greater satisfaction to its owners than a native car on its native heath.

The Pierce-Arrow Motor Car Company, Buffalo, N. Y.

blished Weekly by the Motor World Publishing Company, 1600 Broadway, New York

# ult-Hartford HOCK ABSORBER

# The comfortable car gets the woman's vote

Nothing that the car salesman may say can ever influence "her" to the same extent as will the luxurious easy riding of the car itself.

There is more than usual significance in the fact that twenty-five leading American cars are now regularly equipped with the Truffault-Hartford Shock Absorber.

Many of these same cars have enjoyed the manifold benefits of Truffault-Hartford equipment for more than five consecutive seasons. The Truffault-Hartford is the shock absorber of standard equipment.

It insures maximum possible steadiness and comfort by preventing excessive oscillation of the springs while at the same time allowing them free play.

It minimizes the effect of rough roads on the occupants, enormously reduces depreciation by protecting the machinery from jolts and jars and greatly increases the possible tire mileage.

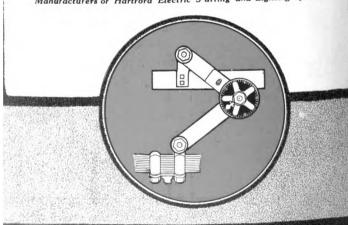
Are they included as equipment on the car you sell? They should be.

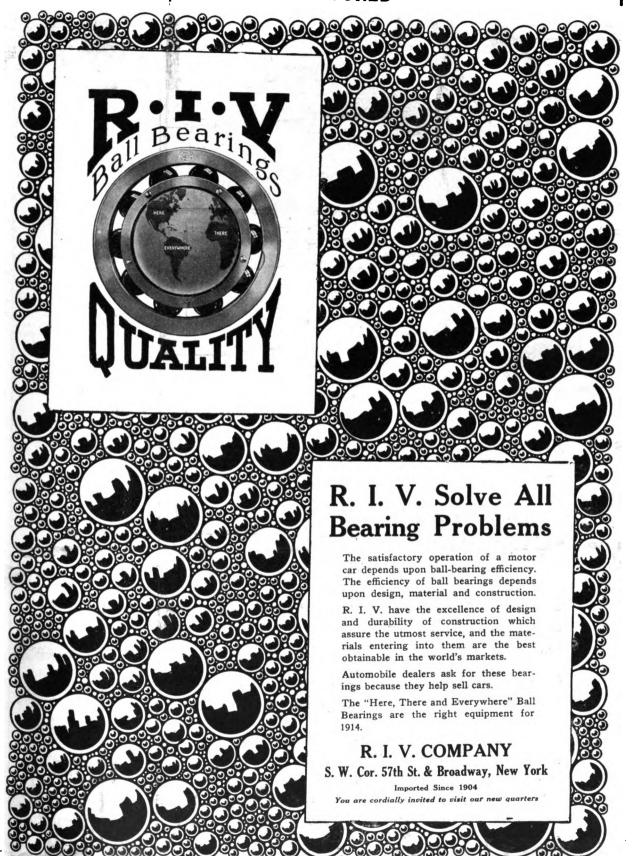
Four models ranging in price from \$16 to \$60 per set of four. Write for particulars.

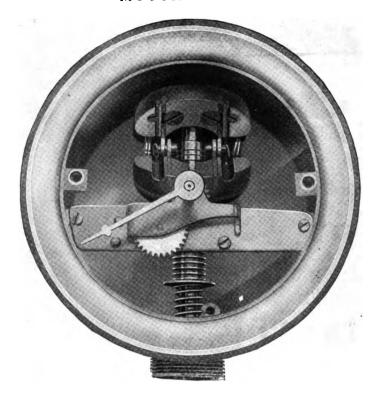
## HARTFORD SUSPENSION CO.

E. V. HARTFORD, Pres.
Office and Works: 142 Bay Street, Jersey City, N. J.

Manufacturers of Hartford Electric S'arting and Lighting System







## Draw Your Own Conclusions-

This photograph shows the interior of the



It bespeaks the absolute simplicity of the Corbin-Brown centrifugal mechanism—the total absence of complicated and delicate parts.

Contrast this with the complicated mechanisms of magnetic speedometers—and draw your own conclusions.

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## THE CORBIN SCREW CORPORATION

THE AMERICAN HARDWARE CORPORATION, Successors

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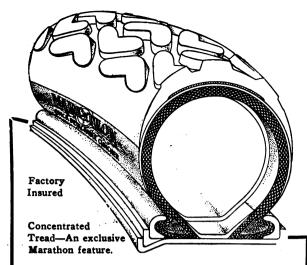
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In the mad rush of things, safety has been sacrificed to speed, in locomotion, business, manufacturing—and in Tire building, very largely.

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This tire is made to meet the hardest service. There's nothing cheap about it.
You can use Marathon with confidence. If you use one, the service will make you a Marathon user exclusively.

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Quality:

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perfect construction.

This exacting process

costs us more—cuts our profit—but it's a great economy to Marathon users.

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Safe in We give a rigid 4,000 Mileage: mile guarantee with the angle tread alone than 4,000 miles on the average — and the thick, plain tread below remains to double it.

Marathon is "The Safe Tire" for both Dealer and Motorist.
Mr. Motorist, when this truly safe tire costs only a trifle more, shouldn't you use it?

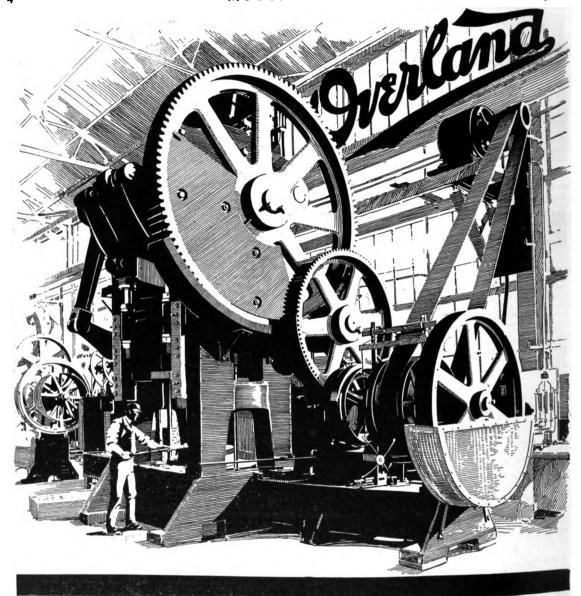
Mr. Dealer, when you can have the exclusive sale of such a tire—should you not have it? Write us.



The Marathon Tire & Rubber Co. CUYAHOGA FALLS, OHIO

DISTRIBUTORS IN MOST LARGE CITIES

(111)



## Two Radiator Shells Per Minute

HE above machine is another one of the numerous Overland cost reducers. This machine turns out 120 whole outside radiator shells per hour.

Small manufacturers, who must by necessity use small equipment, can only turn out two per hour.

We make two per minute!

There you have the difference—which is one of the many reasons why the Overland costs less than any other similar car in the world.

This machine costs \$12,500.00. It is 18 feet high, weighs 185,000 pounds, and has a capacity of 100 tons, or 200,000 pounds 200,000 pounds, pressure.

It is called a "double toggle press" and is one of the most remarkable economizers used in the automobile business.

The Overland costs 30 per cent. less than any other similar car made.

For catalogues please address Dept. 50.

# The Willys-Overland Company, Toledo, Ohio cturers of the famous Overland Delivery Wagons, Garford and Willys-Utility Trucks. Full information

Electric head, side, tail and dash lights Storage battery

35 Horsepower motor 33 x 4 Q. D. tires 114-inch wheelbase

Stewart speedometer Mohair top, curtains and Boot

Clear-vision windshield Electric horn

# MOTORWORLD

Vol. XXXVIII

New York, U. S. A., Thursday, February 26, 1914

No. 10

# BALLS ORGANIZE A NEW INTER-STATE CAR COMPANY

Muncie Millionaires Recommence
Operations with Popular-Priced
Car in View—Twyman Named
as General Manager.

Frank C. Ball, the Muncie (Ind.) millionaire, who purchased for \$215,000 the property of the Inter-State Automobile Co. in that city, when it was sold by the receiver on the 5th inst., has removed all doubts as to his intentions by inaugurating the Inter-State Motor Co., capitalized at \$300,000, and gathering around him men who are well versed in the automobile business.

The plant is again being operated and sufficient material is on hand to permit prompt shipment of the several Inter-State models, but of even more interest is the announcement that included in the plans of the new company is the production of a popular priced line "which will insure a constant all-year-round business."

Ball's associates in the new Inter-State Motor Co. are his three brothers, George A., Edmund B. and William C. Ball, J. M. Maring, Theodore F. Rose, Fred D. Rose and B. W. Twyman. They constitute the board of directors.

The Messrs. Ball are immense manufacturers of glassware, producing, among other things, the almost universally known Mason fruit jar. They also have large holdings in street railway companies in several parts of the country and only recently contributed a \$250,000 building to the Muncie Y. M. C. A.

Maring is identified with manufacturing interests in several cities in Indiana and Ohio and also has large wholesale grocery interests. Among other things, he is also interested in the Hoosier kitchen cabinet. Theodore F. Rose, who is president of the Union National Bank.

of Muncie, is a large holder of real estate and interested in several manufacturing enterprises, and Fred D. Rose is cashier of the Union Bank.

The man best known to the automobile industry, however, is B. W. Twyman, who already has been installed as general manager in charge of production and sales. He is a graduate of the bicycle business and has been successively identified with Orient, E. M. F. and Studebaker cars, at one time having been sales manager for the E. M. F. and Studebaker companies. Latterly he has been serving as president of the Twyman Motor Car. Co., which maintains stores in Columbus, Cincinnati and Dayton.

Not merely backed with the prestige and wealth of the Messrs. Ball, the new company begins business clear of indebtedness with a modern plant and a car which, despite the failure of its original makers. earned a good reputation for the name Inter-State.

## Fight on for Name "Michigan Parts."

Oscar Gumbinsky, the Kalamazoo (Mich.) junk dealer who bought the spare parts of the Michigan "40" car when they were sold by the receiver, and who later organized the Michigan Auto Parts Co., has run afoul of the Michigan Motor Parts Co., of the same city. The latter has already secured a temporary injunction restraining the use of the name Michigan Auto Parts Co., which name, it is asserted, is misleading and calculated to cause confusion.

## Standard Motor Acquires Hackney Plow.

The Standard Motor Co., of Mason City, Ia., which recently took over the Colby Motor Co., of that city, and the Nevada Mfg. Co., of Nevada, Ia., has also acquired the business of the Hackney Mfg. Co., of St. Paul, Minn., which latter makes a motor plow. It is stated that the Hackneys will become directors of the Standard company, which will continue the St. Paul plant.

# RUDGE-WHITWORTH RIGHTS CAUSE "PRETTY HOW'DY'DO"

Difference Between Houk and Standard Roller Bearing Co. Intensified—Climax Precipitated by All Parties Involved.

Matters affecting the standing of the Rudge-Whitworth wire wheel in America have taken an acute turn, and before the situation is relieved it is fairly plain that the English manufacturers will have to spend some time on these shores.

As already is known, the receivers of the Standard Roller Bearing Co., of Philadelphia, have sued the Houk Mfg. Co., of Buffalo, for infringement of the Rudge-Whitworth patent, and are seeking to restrain the Houk people from using the name Rudge-Whitworth.

The Houk Mfg. Co., as is equally well known, comprises what was formerly the McCue Co., of Buffalo, the change of name and control being brought about by George W. Houk, who marketed Rudge-Whitworth wheels made by the Philadelphia company. As it was known that Houk was a joint licensee, under date October 5, 1912, with the Standard Roller Bearing Co., with power to have wheels made for him, the Standard Roller Bearing Co.'s suit against the Houk Mfg. Co. proved in the nature of a challenge which was wholly unexpected.

Houk himself met the challenge by immediately going to Coventry and seeking out the Rudge-Whitworth principals, taking with him one of the Houk wheels. As a result of his visit, he left the Coventry plant with the understanding that he possessed the support of the Rudge-Whitworth company in the pending litigation, and also that the Houk wheel and everything else was of a satisfactory nature. He so cabled to Buffalo and this "everything-satisfactory-including-Houk-wheel" message naturally gave rise to the printed reports that Rudge-Whit-

worth had approved that wheel and would stand behind Houk in the pending litigation. This report that the Houk wheel had been approved was duly recorded in Motor World.

It appears, however, that after Houk left Coventry the Rudge-Whitworth company addressed to him a letter. "Care Steamship Lusitania, Liverpool," which raised a doubt concerning the satisfactoriness of the Houk production. This letter was not received or opened by Houk until after the steamer was on the high seas.

Meanwhile, S. Lawrence Bodine, one of the receivers of the Standard Roller Bearing Co., took passage to England and, as the result of his arrival and representations to Rudge-Whitworth, the latter, on Saturday last, 21st inst., cabled Motor World, and other American trade papers, as follows:

"Rudge - Whitworth licensees are Standard Roller Bearing. Houk wheel not approved."

On the same day, the Standard Roller Bearing Co. report the receipt of this cable from Rudge-Whitworth:

"In view of Houk's persistent statements his wheel approved as licensed by us we authorize our name in suit to restrain."

Facing this situation, Houk has determined to put his rights to the test, and for that purpose he is issuing, in the name of the George W. Houk Co., under which name the Rudge-Whitworth joint license was issued, an announcement to the trade declaring his intention to have manufactured for him by the Houk Mfg. Co. not merely the Houk wheel but the Rudge-Whitworth wire wheel, and, to add interest to the matter, is promising new prices on the latter early in March. He naturally believes he is well within his rights, his license permitting him to have Rudge-Whitworth wheels made for him apparently wherever he wills, the license further specifically providing that the Rudge-Whitworth approval of such productions shall not be "unreasonably withheld." He believes that it can be abundantly proven by their users that the wheels he is manufacturing have given satisfaction and, therefore, the withholding of the Rudge-Whitworth approval is unreasonable.

It is due Houk to say that he made no "persistent statements" regarding the approval of his wheel by the Rudge-Whitworth company. All that was printed concerning such approval grew out of his "Everything-satisfactory" cablegram, which, as stated, was sent from Liverpool before he received the Rudge-Whitworth letter questioning the belief.

# BROKERS TO OPERATE THE MITCHELL WAGON BUSINESS

They Explain Their Relation to Mitchell - Lewis Transaction— Deny I. H. C. is Interested

in Any Way.

Instead of having been sold to the International Harvester Co., as earlier news reports stated, the wagon business of the Mitchell-Lewis Motor Co., of Racine, Wis., is now in the hands of White, Weld & Co., New York bankers, and a number of their associates; the bankers, however, are the principal owners, and while they were believed in some quarters to have acted as brokers in the matter, they declare they acted for themselves alone and will operate the wagon business, temporarily, at least.

It is, of course, not unlikely that the business will be sold at some future time to some one who desires to engage in that line of trade, but no purchaser, it is stated, is in sight at the present time and the future has not been definitely outlined.

The sale was the outgrowth of a \$2,500,000 note issue late in 1911, White, Weld & Co. taking a portion of the paper and disposing of a part of it to some of its clients; the remainder was taken by Chicago interests, but White, Weld & Co. acted a major part in the transaction and has since acted as the Mitchell-Lewis bankers.

In August, 1912, when the \$2,500,000 fell due, \$750,000 was paid and the remaining \$1,750,000 was extended for a year. In August, 1913, the company was able to pay but \$250,000 and the remaining \$1,500,000 was extended to August, 1914. Various business reverses of an internal nature had made the maturing obligations a burden and it was questionable whether they could be met next August; neither was it deemed advisable to request a further extension.

In this emergency White, Weld & Co. and their clients who held Mitchell-Lewis paper agreed to exchange their notes for interests in the wagon business, which was made a separate corporation. When this transfer had been effected the automobile end of the business was left practically unencumbered, or, at least, has not more encumbrances than it can take care of.

"We were willing to exchange our notes against the automobile business, which has smaller assets but larger profits, for a claim on the wagon business which has greater assets and smaller

profits but is a sure asset, even though slower," is the way the situation was described to Motor World by a White-Weld representative.

The exact amount held by the bankers was not disclosed by them beyond the statement that they now practically own the wagon business. This end of the industry turns out vehicles for the farms of the West and is said to possess desirable possibilities.

## No Ford Cars for Fifty Dollars.

Henry Ford and the Ford Motor Co. have done some very wonderful things, but they have not yet been able to produce a Ford car for \$50. Despite the fact, the Ford Motor Co.'s advertisement in Motor World of February 12th so stated, the Ford Model T being quoted at \$50 instead of \$500. The error was caused by the dropping out of one of the naughts and, although the mistake was obvious, a number of orders, enclosing checks for \$50, were received

## Claims Infringement of Spring Repair.

Claiming that William Wooster, who operates the Auto Surplus Stock Syndicate, in New York City, has infringed its emergency spring repair patent, No. 902,250, the Motor Car Equipment Co. of New York City, filed suit against him this week in the Federal court in New York. The patent was granted October 27, 1908, to Dudley Pierce Power, of Riverdale, N. J., and was assigned to the Equipment company last May. It consists of a rigid bar which is clipped in place over the fracture in the leaves.

## Ohio Dealers Forming State Association.

Ohio is in a fair way of acquiring a State automobile dealers' association. The initiative was taken by the Columbus association at a meeting held Monday last. As a result, invitations will be extended to all other local associations in the State, with a view of holding a meeting in Columbus, during next month, at which time it is believed the State organization will be formally perfected.

Troy "Coquetting" with Herreshoff.

Efforts to induce the Herreshoff Motor Co., of Detroit, to remove to Troy.

N. Y., are in progress, a meeting for that purpose having been held last week at which Charles H. Herreshoff himself was in attendance. The Mayor of Troy and several other prominent men were also present. A former freight car plant is available and it is stated that if \$75,000 cash can be raised the deal can be consummated.

## KLAXON ISSUES LICENSE FOR SALE OF ITS HORNS

Grants Privilege to New York Supplyman - Injunctions Restrain Other Dealers from Handling Newtones and Spartons.

Having secured injunctions in the Federal court in New York City against seven metropolitan supply dealers restraining them from handling Newtone horns, the Lovell-McConnell Mfg. Co. this week took a new step in the granting of Klaxon licenses and issued one to a dealer, two already having been granted to manufacturers; the dealer in this case is Charles E. Miller, the New York supplyman, who maintains branches in 15 cities. Under this license Miller will handle Klaxons exclusively.

The granting of a license to Miller marks the end of a hard fight between him and the Klaxon company; when proceedings were instituted against him for handling Newtone horns in violation of the Klaxon patent license attached to the horns he gave up the Klaxon business and continued to sell Newtones. The decree of this week, however, prevents him handling Newtones any longer.

The seven dealers, of whom Miller was one, and against whom decrees were secured, are: National Auto Supply Co., Max Zeisler, trading as the Imperial Auto Supply Co., New York Auto Supply Co., 35% Automobile Supply Co., American Auto Supply Co., Crane & Wagner Auto Supply Co., and Miller. The termination of this group of suits serves to clear somewhat the array of litigation which grew up about the Klaxon patents, Nos. 923,048, 923,049 and 923,122.

In an action in the Federal court in New York City against the A. Elliott Ranney Co. for selling Hudson cars in New York equipped with Sparton horns and for selling the horns separately, Judge Ward last Friday, 20th inst., granted a preliminary injunction. restraining the company from selling Sparton horns until the suit is determined. The court based its decision upon the decision of Judge Chatfield in the Federal court in Brooklyn, who recently declared the Newtone an infringer. Judge Ward said the Sparton horn appeared to be "even nearer" the Klaxon than is the Newtone.

Final argument was had in the Elliott-Ranney suit yesterday afternoon, 25th inst., and also in cases against the Jackson Eastern Distributers and the Haynes Automobile Co., both New York City dealers. Decision in these actions will

afford an adjudication of the relations of the Sparton horn to the Klaxon pat-

## Two Big Cab Companies to Unite.

The Mason-Seaman Transportation Co. and the Yellow Taxicab Co., which have been rivals for the motor cab trade in New York City, are to be rivals no longer; they are to be merged under the Mason-Seaman name and within a short time the business will be conducted by that corporation. Since the new rates went into effect the Yellow company has been running a private-call business under rates of its own while the Mason-Seaman company has sought business publicly under the lower rates.

Whereas the Mason-Seaman is now capitalized at \$5,000,000 it will have \$5,-000,000 common and \$5,000,000 preferred stock after the reorganization. The directors will be William H. Barnard, A. F. Rockwell, Mortimer B. Fuller, Allen Lexow, P. J. Holsworth, James W. Salisbury, Francois Ducasse, E. B. Seaman, Jr., and Jacques Rosenberg. William H. Barnard will be president and treasurer, Allen Lexow and E. B. Seaman, Jr., vice-presidents, James W. Salisbury secretary and A. F. Rockwell president of the board.

Of these men. Barnard, Ducasse, Seaman and Rosenberg are Mason-Seaman men, and Rockwell and Holsworth are identified with the Yellow company.

#### Nyberg Likely to Regain Factory.

Efforts of the trustee to dispose of the Nyberg Automobile Works, of Anderson, Ind., have proved more or less abortive, the only bid for the property as a whole having been made by Henry Nyberg himself. He offered \$7,000 and to assume all liens, amounting to \$22,000. There were several other bids for parcels of the factory and equipment, but they were not considered favorable, and Nyberg's proposal will be recommended to the court for acceptance. If the court approves, Nyberg expects to have the plant in operation again before the end of next month.

## M. A. M. Moves to Nearby Building.

After having been located at 17 West 42nd street since its headquarters were established in New York, the Motor and Accessory Manufacturers are preparing to remove to the recently erected and, therefore, very much more modern Aeolian Building at No. 29 on the same street. It expects to take possession about April 1st.

## **ENGINEERS CHOOSE DATES** FOR CAPE MAY MEETING

June 23 7 Formally Slated for Annual Summer Session to be Held at Seaside Resort-Schedule of Meetings Laid Down.

Cape May, N. J., having been formally chosen as the scene for the forthcoming annual summer meeting of the Society of Automobile Engineers, the dates, too, have been definitely decided by the Council of the organization.

The meeting is to be held in the new Cape May Hotel, which is located almost directly on the beach, and will be opened on Tuesday afternoon, June 23rd, with a meeting of the Standards Committee. Thereafter the activities will be continuous until Friday afternoon, though not all the time will be devoted to serious subjects. Wednesday morning, June 24th, will be free with a business and professional session scheduled for 2 o'clock in the afternoon; the evening will be devoted to eintertainment by the various sections of the society.

The second professional session is scheduled for 9:30 in the morning of Thursday, June 25th, with another professional session at 2 o'clock in the afternoon of the same day; at 8 o'clock in the evening there will be a dinner and a lecture on the European trip proposed for the fall of the year. Friday morning, June 26th, will be given over to a professional session and the meeting will adjourn, sine die, at about 1 o'clock.

The Cape May Hotel, which has been selected for the meeting, is a fireproof structure with accommodations for 600 guests; special rates upon the American plan have been obtained, further information with regard to which will be given by Manager James S. Galbrey, at the hotel. In connection with the hotel there are facilities for golf, tennis, fishing, bathing and so forth and in the hotel's garage there are provisions for charging electric cars as well as caring for gasolene vehicles. Special arrangements are being made for the entertainment of the ladies of the party and it is urgently requested that members be accompanied by their families.

#### Cincinnati to Hold Monthly Auctions.

In Cincinnati they are about to make an effort to relieve the used car situation by conducting monthly auction sales. The General Auto Parts Co., of 3433-37 Reading road, are the sponsors of the undertaking.

## MOTOR WORLD

# CRITICAL YEAR IN RUBBER INJURED GOODRICH PROFITS

So Says President Work in Presenting Full Report—Big Reduction, However, Effected in Current Liabilities.

Because of its preliminary announcement that its net profits for the year 1913 approximated \$2,600,000, the complete annual report of the B. F. Goodrich Co. for the 12 months had, to a certain extent, been discounted. It made its appearance on Tuesday last and discloses that the exact net profits amounted to \$2,599,747 which, large though it may appear, represents a considerable shrinkage.

As the date of the Goodrich fiscal year was changed to meet new conditions when it reincorporated under the laws of New York, shortly after acquiring the Diamond Rubber Co., a comparison is possible only with the figures for the nine months ending December 31, 1912. For that period, the profits were \$3,522,489. After deducting \$2,100,000, representing the dividend on the \$30,000,000 preferred stock, less than one per cent. is left for payment on the common, on which, however, dividends were discontinued early last year.

The assets of the big company total \$94,511,957, as compared with \$98.786,-114 for the nine-month period of 1912. Its liabilities total the same amount, of which, for 1913, \$705,983 is represented by surplus and \$300,000 by reserve for contingencies, as against \$300,000 for reserves and \$806,235 surplus for the nine-month period for 1913.

Probably the most striking feature of the 1913 report is the reduction of more than \$4,000,000 in current liabilities.

The income account for the year compares as follows with the previous report for the nine months ended December 31, 1912:

Year ended Dec. 31, 13.  Net sales\$39,509,347  Manufacturing, selling and general admin.	9 mos. end. Dec. 31, 12. \$37,533,861
istration expenses 36,451,234  Net profit from opera-	33,814,527
tion	3,719,334 571,845
Total income \$3,549,429  Depreciation 541,358  *Red. of pref. stock 168,417  Interest and bills pay-	\$4,291,179 440,852
able 239,907	327,838
Net profit \$2,599,747	\$3,522,489

<sup>\*</sup>Reduction of treasury preferred stock from cost to par value.

The consolidated balance sheet as of December 31, 1913, compares as follows:

Asset	5.	
	1913.	1912.
Real estate, buildings,		
plant, good-will, etc \$71,	060,802	\$70,685,722
Investments in other		
companies 1,	197,058	1,635,958
Preferred stock in treas-		
ury 2,	058,700	2,227,117
Society Francaise B. F.		
Goodrich	570,987	
Current assets 19,	401,460	24,007,698
Deferred charges to op-		
eration	222,950	229,619
Total\$94,	511,957	\$98,786,114
Liabilit	ies.	
Common stock\$60,	000,000	\$60,000,000
Preferred stock 30,	000,000	30,000,000
Current liabilities 3,	505,974	7,679,879
Reserve for contingen-		
cies	300,000	300,000
	705,983	806,235
Total\$94,	511,957	\$98,786,114

In his report to the stockholders, B. G. Work, president of the Goodrich company, states that "the year 1913 was a critical one in the rubber industry. At the beginning of the year the price of plantation rubber was over \$1 a pound," he continues. "At the end of the year it was about 55 cents a pound. Operations of the business require a large inventory of both crude and the manufactured rubber.

In such a declining market as that of 1913 it was inevitable that manufacturing would show a much smaller margin of profit that it would have shown on the same volume of business in a normal market. In addition to this factor. which was general in the rubber business, your company encountered early in the year unsettled labor conditions and was later confronted with a shortage of skilled labor. These conditions made it impossible to meet the summet trade and keep our branches and agencies stocked with merchandise. Later in the year, when it was possible to again run your plants at full capacity, the general decline in business of all sorts throughout the country brought a lull in the trade, and your company, in common with its competitors, met a decided decline in the volume of orders.

"In spite of these handicaps, serious as they were in the aggregate, your company not only earned the full amount of the preferred dividend, with a reasonable margin besides, but also materially strengthened its financial position by cutting down the amount of outstanding current liabilities. As one of the means to this end your directors early in the year decided to discontinue the dividend on the common stock until conditions are such as to warrant its resumption."

## CHALMERS STOCK OFFERED FOR PUBLIC SUBSCRIPTION

Detroit Manufacturer Places \$1,-500,000 Preferred Shares on Open Market—Discloses Attractive Profits and Conditions.

On its recent issue, the Chalmers Motor Co., of Detroit, is offering for public subscription, \$1,500,000 of its seven per cent. cumulative preferred stock the company's total capital being \$2,000,000 preferred and \$5,000,000 common. The preferred stock is offered at 102½ and is retirable annually at 115 in blocks of \$175,000. In addition to binding itself to retire that amount each year, the Chalmers company means to maintain net quick assets equal to at least \$175 per share on outstanding preferred, and a net surplus of at least \$250,000.

Its financial statement, which accompanies the invitation for public subscription, shows that the Chalmers average annual profits for the five years ending June 30th last amounted to \$1,368,044.

The company's financial statement, as of June 30, 1913, in which, it will be noted, good-will is carried at the nominal sum of \$1, is as follows:

Quick	A404 (01 M
Cash on hand and in banks	\$404,071.03
Notes and accounts	
receivable \$705,728.64	
Less-Reserve 12,111.81	
	. 693,616. <b>83</b>
Merchandise inventories.\$4,232,136.98	
Less—Reserve 303,463.30	
Less-Reserve 303, tolico	3,928,673.68
	26 681.98
Prepaid expenses	20,00
	\$5,053,663.54
	\$3,033,000
Investments-	
Stocks of other com-	
panies \$521,755.83	
Sales branch 10,135.70	
Sales branch	531,891.53
D1	
Plant and Equipment-	
Buildings, machinery,	
land, etc\$2,211,474.65	
Less-Reserve 282,884.61	
Less—Reserve 202,004.01	1.00
Good-will	1.00
	\$7,514,146.11
Liabilities.	
Current—	\$100,000.00
Due banks	
Current merchandise accounts	181.215.17
Current merchandise accounts	381,215.17 108,819,96
Current merchandise accounts	381,215.17 108,819.96
Current merchandise accounts	381,215.17 108,819.96 15,832.63
Current merchandise accounts	381,215.17 108,819.96
Current merchandise accounts Deposits—Dealers' contracts Accrued accounts	381,215.17 108,819.96 15,832.63 \$605,867.76
Current merchandise accounts Deposits—Dealers' contracts Accrued accounts	381,215.17 108,819.96 15,832.63 \$605,867.76
Current merchandise accounts  Deposits—Dealers' contracts  Accrued accounts	381,215.17 108,819.96 15,832.63 \$605,867.76
Current merchandise accounts  Deposits—Dealers' contracts  Accrued accounts  Reserves— Deferred expenses Liability to Stockholders—	381,215.17 108,819.96 15,832.63 \$605,867.76
Current merchandise accounts Deposits—Dealers' contracts Accrued accounts  Reserves— Deferred expenses Liability to Stockholders— Liability to Stockholders— Liability to cent cumulative:	381,215.17 108,819.96 15,832.63 \$605,867.76
Current merchandise accounts Deposits—Dealers' contracts Accrued accounts  Reserves— Deferred expenses Liability to Stockholders— Liability to Stockholders— Liability to cent cumulative:	381,215.17 108,819.96 15,832.63 \$605,867.76
Current merchandise accounts  Deposits—Dealers' contracts  Accrued accounts  Reserves— Deferred expenses  Liability to Stockholders— Preferred—7 per cent. cumulative: Outstanding\$1,500,000.00	381,215.17 108,819.96 15,832.63 \$605,867.76
Current merchandise accounts  Deposits—Dealers' contracts  Accrued accounts  Reserves— Deferred expenses Liability to Stockholders— Preferred—7 per cent. cumulative: Outstanding	381,215.17 108,819.96 15,832.63 \$605,867.76
Current merchandise accounts  Deposits—Dealers' contracts  Reserves— Deferred expenses  Liability to Stockholders— Preferred—7 per cent. cumulative: Outstanding\$1,500,000.00 Common: Outstanding\$5,000,000.00	381,215.17 108,819.96 15,832.63 \$605,867.76 \$28,458.04
Current merchandise accounts  Deposits—Dealers' contracts  Reserves— Deferred expenses  Liability to Stockholders— Preferred—7 per cent. cumulative: Outstanding\$1,500,000.00 Common: Outstanding\$5,000,000.00	381,215.17 108,819.96 15,832.63 \$605,867.76 \$28,458.04
Current merchandise accounts  Deposits—Dealers' contracts  Reserves— Deferred expenses Liability to Stockholders— Preferred—7 per cent. cumulative: Outstanding \$1.500,000.00 Common: Outstanding 5.000,000.00 Surplus 379,828.31	381,215.17 108,819.96 15,832.63 \$605,867.76 \$28,458.04 \$6,879,820.31
Current merchandise accounts  Deposits—Dealers' contracts  Reserves— Deferred expenses Liability to Stockholders— Preferred—7 per cent. cumulative: Outstanding \$1.500,000.00 Common: Outstanding 5.000,000.00 Surplus 379,828.31	381,215.17 108,819.96 15,832.63 \$605,867.76 \$28,458.04



Canton, O.—Automobile Products Co., under Ohio laws; authorized capital, \$150,000. Corporators—Daniel Thomas, J. F. Moulan and S. Ake.

Houston, Tex.—Levand Auto Supply Co., under Texas laws; authorized capital, \$10,000. Corporators—M. Levand, H. M. Levand and J. L. Puljol.

Hamilton, Ont.—Fox Chain Co., under Canadian laws; authorized capital, \$200,000; to manufacture tire chains, etc. Corporators—Thomas Crosthwait, L. H. Gray and others.

Kissimmee, Fla.—Lupfer-Prather Garage, under Florida laws; authorized capital, \$5,000; to operate a garage. Corporators—G. H. Prather, J. E. Lupfer and J. E. Davis.

Columbus, O.—Spring Street Garage Co., under Ohio laws; authorized capital, \$5,000; to operate a garage. Corporators—J. M. Hamilton, F. M. Hamilton and L. R. Wottering.

Spencer, Ind.—Spencer Auto & Machine Co., under Indiana laws; authorized capital, \$6,000. Corporators:—Geo. W. White, Harlan B. White, Herbert C. White and others.

Augusta, Me.—Ceco Cycle-Car Sales Co., under Maine laws; authorized capital, \$50,000; to sell motors and motor vehicles of all kinds. Corporators—E. M. Leavitt, Augusta, and others.

Seattle, Wash.—Pacific Tire & Supply Co., under Washington laws; authorized capital, \$700,000; to manufacture automobile tires, etc. Corporators—B. L. Gates, Austin E. Griffiths and A. K. Allen.

Tupper Lake, N. Y.—The Dubois Engine Co., under New York laws; authorized capital, \$10,000. Corporators—Antoine E. Dubois, Frank J. Dubois and Benjamin J. Fountain, all of Tupper Lake.

New York, N. Y.—Azo Motor Co., under Delaware laws; authorized capital, \$750,000; to deal in motor vehicles. Corporators—L. E. Latta, New York; W. J. Maloney and H. E. Latta, both of Wilmington.

Scranton, Pa.—Maccar Truck Co., under Pennsylvania laws; authorized capital, \$125,000. Corporators—Charles H. Genter, E. S. Williams, E. H. Connell, R. G. Jermyn, J. S. McAnulty, F. L.

Belin, J. J. Jermyn, R. E. Weeks and A. B. Warman.

Gloucester City, N. J.—Brown & Robb Co., under New Jersey laws; authorized capital, \$100,000; to manufacture automobiles and wagons. Corporators—Enoch R. Brown, Thomas H. Robb and Herman Johnson.

Chicago, Ill.—Standard Motor Car Co., under Illinois laws; authorized capital, \$10,000; to conduct a general motor vehicle business. Corporators—Eric Kuhlberger, David Gordon and Borghild Christiansen.

Chicago, Ill.—Osgood Autolite Deflector Co., under Illinois laws; authorized capital, \$5,000; to manufacture deflectors for automobile lights, etc. Corporators—Samuel W. Osgood, William C. Kegner and James Jay Sheridan.

Ft. Wayne, Ind.—Randall Auto Sales Corporation, under Indiana laws; authorized capital, \$20,000; to conduct a motor vehicle business and operate a garage. Corporators—A. L. Randall, G. E. Randall and M. A. Randall.

Wilmington, Del.—Salom Electric Storage Battery Co., under Delaware laws; authorized capital, \$830,000; to manufacture batteries, electric appliances, etc. Corporators—H. E. Latta, W. J. Maloney and O. J. Reichard.

Laporte, Ind.—Walker Starter Co., under Indiana laws; authorized capital, \$30,000; to manufacture starting devices. Corporators—Frank H. Walker. W. K. Loofbourrow, Dwight L. Loofbourrow, Edmund L. Walker and Dora Walker.

New York, N. Y.—Mutual Auto Exchange, under New York laws; authorized capital, \$1,000. Corporators—Hyman Rosenson, 60 West 117th, street; Benjamin Feldman, 19 Cedar street; Samuel Wolfson, 350 West 158th street.

Racine, Wis.—Mitchell Wagon Co., under Wisconsin laws; authorized capital, \$500,000; to manufacture wagons and motor car bodies. Corporators—M. J. Knobloch, J. B. Simmons, J. B. Rowlands, G. N. Fratt and Raymond Weins.

Brooklyn, N. Y.—Renault Tire & Rubber Co., under New York laws; authorized capital. \$25,000; to conduct a general tire and rubber goods business. Corporators—Max Hillman, 835 Kelly street; David M. Hanley, Hotel Gre-

noble; Harry Baumstone, 85 East 118th street.

Bayonne, N. J.—Crucible Steel Casting Co., under New Jersey laws; authorized capital, \$25,000; to manufacture iron, steel, manganese, copper and other materials. Corporators—J. B. R. Smith, P. S. Brower and J. B. Reilly, all of Newark.

New York, N. Y.—R. W. Lewis, Inc., under New York laws; authorized capital. \$10,000; to deal in motor cars, etc. Corporators—Robert W. Lewis, 15 W. 63rd street; Julius Loeb, 202 Brown place; Robert Massey, 252 West 64th street.

New York, N. Y.—Marmon New York Co., under New York laws; authorized capital, \$1,000; to conduct an automobile business. Corporators—Frank G. Carrie, 210 West 108th street; James B. Curtis and William Shibderm, both of 115 Broadway.

New York, N. Y.—Pierce-Arrow Renting Co., under New York laws; authorized capital, \$500; to conduct an automobile renting business. Corporators—John Smith Williams, Leo Morford and Harry Abercrombie, all of 205 West End avenue.

New York, N. Y.—Partridge, Clark & Kerrigan, under New York laws; authorized capital, \$100,000; to deal in motor cars, supplies, etc. Corporators—Ernest S. Partridge, Kingston, N. Y.; Samuel J. Wagstaff, Babylon, N. Y.; Bertram A. Wordemann, Weehawken, N. J.

New York, N. Y.—Commercial Transportation Co., under New York laws; authorized capital, \$10,000; to conduct a motor truck business. Corporators—Henry Simonoff, 1299 Franklin avenue; Harry Gottlieb, 1214 Boston road; Gregory Adler, 105 West 113th street.

New York, N. Y.—New Process Rubber Co., under New York laws; authorized capital, \$5,000; to rebuild tires, etc. Corporators—Henri Dujardin,248 Washington street; T. Philip Hornsey, 309 Broadway; Cornelius D. McGhiehan, 2 Pearsall avenue, Jersey City, N. J.

New York, N. Y.—Geneva-Bauman Co., under New York laws; authorized capital, \$2,500; to deal in motor cars, motorcycles, etc. Corporators—Alexander Bauman, 52 Cathedral Parkway; Jos.

I. Geneva, 866 Southern Boulevard; Matilda Landsman, 26 Lenox avenue.

New York, N. Y.—McKinley Square Transportation Co., under New York laws; authorized capital, \$1,000; to conduct an automobile business. Corporators—John Zeeuw, 1374 Boston road; Joseph B. Brady, 1390 Clinton avenue; Patrick O'Keefe, 141 Cherry street.

New York, N. Y.—Public Service Garage, under New York laws; authorized capital, \$3,000; to conduct a garage. Corporators—Elizabeth A. Reilly, 325 East 31st street; John C. Voight, 42 Reservoir avenue, Jersey City, N. J.; Alfred G. Steiner, 341 St. Ann's avenue, Bronx.

New York, N. Y.—Auto & Uniform Garment Co., under New York laws; authorized capital, \$5,000; to manufacture automobile garments, etc. Corporators—Harris G. Steinberg, 1321 Hoe avenue; Aaron A. Goldfield, 550 West 144th street; Bennie Batkin, 355 East 101st street.

New York, N. Y.—Costa Piston Ring Corporation, under New York laws; authorized capital, \$10,000; to manufacture engine parts, etc. Corporators—Clarence G. Campbell, 11 West 86th street; Wm. R. Baird, 144 Ralston avenue, South Orange, N. J.; Stephen S. Newton, 199 Washington street.

New York, N. Y.—Benz Automobile Sales Corporation, under New York laws; authorized capital, \$25,000. Corporators—Russell L. Engs, 328 Church street, Richmond Hill, N. Y.; Samuel F. Engs, Great Barrington, Mass.; Paul V. Clodio, Bayside, N. Y.; Paul R. Pelz, Mannheim, Germany.

New York, N. Y.—Standard Tractor Co., under New York laws; authorized capital, \$50,000; to manufacture motor tractors. Corporators—John W. Blaisdell. 264 Decatur street, Brooklyn; Geo. T. Whyte, 258 Clerk street, Jersey City, N. J.; D. Henry Hamje, 174 N. Centre street, Orange, N. J.

#### Changes in Capitalization.

Canton, O.—Timken Detroit Axle Co., from \$942,000 to \$3,000,000.

New York, N. Y.—Sharrer Patent Top Co., from \$25,000 to \$100,00.

Sioux City, Ia.—Bennett Auto Supply Co., from \$25,000 to \$150,000.

## Recent Losses by Fire.

Lynn, Mass.—Essex Garage, Broad street; building and 100 cars destroyed. Stephen Athus, an employe, killed. Property loss. \$275,000.

Austin. Ia.—Motor Inn Garage, Water and Chatham streets; garage and ten cars damaged. Loss on building, \$1.000; on cars, not stated.

# THIRD RUBBER SUIT LAID AT PENNSYLVANIA'S DOOR

Importer's Failure Causes Filing of Numerous Actions on Crude Rubber Contracts—One Against Swinehart Fails.

Numerous suits growing out of the failure of the New York Commercial Co., a crude rubber importer, have been filed against tire companies, and the end does not yet appear to be in sight. Another was instituted this week in the Supreme Court for New York county against the Pennsylvania Rubber Co., of Jeanette, Pa., by Charles Engel, on assigned claims.

Engel asks \$68,153.03 on about 20 separate contracts alleged to have been made by the Pennsylvania and New York Commercial companies; they were once assigned before reaching Engel's hands; in each separate contract the amount asked is the difference between the contract price of the rubber and the price realized when it was sold in the open market after the alleged refusal of the Pennsylvania company to accept the shipments. Engel secured an attachment against the rubber company.

In October Heidelbach, Ickelheimer & Co., which claimed a New York commercial contract had been transferred to it, sued for \$2,489.56 and in January the trustees of the New York Commercial sued for \$18,821.60, making a total of \$89,464.19 which has laid at the Jeannette company's door as the result of the importers' failure.

But even with attachments the suits do not appear so formidable in the light of what happened to one of this group in the Federal court in New York City this week; it was brought by the trustees of the bankrupt against the Swinehart Tire & Rubber Co. and, as in the Pennsylvania case, an attachment was secured. But the Swinehart company succeeded in having the attachment vacated by the court and this week had the case itself d ismissed, it ruling that a cause of action was not stated in the papers of the complainant.

#### Minor Business Troubles.

The J. P. Sjoberg Co., of 1314 Avenue A and 351 West 52nd street, New York City, has assigned for the benefit of creditors to Lewis H. Woodburn; the company, of which J. P. Sjoberg is president, was incorporated in 1911 and conducted an automobile repairing and woodworking business.

The Court of Chancery, of Trenton, N. J., has been petitioned by M. Krause to appoint a receiver for the Taxi Service Co. He claims he is unable to collect a judgment of \$140 given him as damages for having been struck by one of the company's cabs while he was riding a motorcycle. He also asserts that to thwart him a mortgage was given to Emmaline Snook and he asks that this he set aside.

The Albany (N. Y.) Vulcanizing Works, has filed schedules in bankruptcy showing liabilities of \$15,393 and assets \$6,151. The latter includes: Stock, \$852; machinery and tools, \$984; accounts receivable, \$2,864; cash in bank, \$234; stocks, bonds, etc., \$15; claim against the Century Tire Co., of Plainfield, N. J., \$1,000.

The assets of the Union Motor Car Co., of Tacoma, Wash., have been nearly all disposed of by Charles M. Logan, the receiver; it is anticipated that the liquidation will have been completed by March 1.

#### Utah Headlight Casts a Few Rays.

What is styled the Petty Dirigible Auto Headlight Co., of Salt Lake City, is stated to have entered into an agreement with O. A. Slade and R. E. Martin, of Lehi, Utah, for the establishment of a factory for the manufacture of the Petty headlight in the Central West. Slade and Martin were at one time residents of Des Moines, Ia. The Petty company, of which A. A. Calister is secretary and treasurer, also expects to establish a plant in Salt Lake City and is reported to be dickering with engineers who are seeking the rights for Eastern territory.

## Separate Branches for J-M Accessories.

Apart from its depots which handle its asbestos product, the H. W. Johns-Manville Co., of New York, is now estaplishing separate branches which will carry the automobile accessories, the output of which it controls. The first of these has been located in Indianapolis and the other is now being established at 3120 Locust street, St. Louis, Mo. It will be in charge of R. E. Campbell.

## Essenkay Company Files Funeral Notice.

The Essenkay Sales Co., which formerly did business at 809 Woodward avenue, Detroit, and which was one of the many companies bearing that name which were formed when the Essenkay tire filling epidemic was rife, has filed notice of dissolution. All of the company's property was disposed of at mortgage sale.



# In SALESROOM and GARAGE



Col. V. F. Whitesides, who operated the Whitesides Commercial Car Co., in New Castle, Ind., until it went into the hands of a receiver in December, 1912, has entered the trade in Indianapolis as a dealer; he has the Saxon agency and is associated with Harry Archey. They have located at 343 North Capitol boulevard. Following the failure of his truck company, Whitesides sought to launch an "Ironsides" car and since that time generally is referred to as Col. "Ironsides" Whitesides.

The Padden Auto Supply Co. has been formed in Waterloo, Ia., and will conduct a jobbing business, being operated in connection with the Harry Padden Auto Co., on Sycamore street; W. H. Horn, formerly secretary and manager of the Horn Auto & Supply Co., of Omaha, will act as manager and it is planned to cover the State of Iowa. The Harry Padden company handles Studebaker, Abbott-Detroit and Metz cars.

The Motor Sales Co. has been formed in Louisville, Ky., and will handle Paige and Metz cars at 728 4th street, a sales-room formerly occupied by the Reid Auto Co. The officers of the Motor Sales Co. are: President, A. W. Lee, Jr.; vice-president and general manager, R. W. Heer; secretary and treasurer, H. O. Heer; sales manager, A. C. Montenegro, Jr. R. W. Heer formerly was connected with the Reid company.

E. H. Sherwood and M. W. McClure have taken over the distribution of Empire cars in Louisiana and Texas; they have opened offices in the Juanita building, in Dallas. McClure formerly was connected with the Marion interests in Texas and Sherwood was successively sales manager of the Mercer Automobile Co., of Trenton, N. J., and assistant sales manager of the American Motors Co.

E. J. Jaeger and his son, N. M. Jaeger, have entered the trade in Seattle under the style E. J. Jaeger & Son; they have leased salesrooms at 1407-9 12th avenue and will handle the Case line. Jaeger formerly operated a store in Zillah, Wash., but lost his business through fire a year ago; his son has had considerable experience in sales and service work.

The Tire Repair Equipment Co., of

Appleton, Wis., has purchased the stock, machinery, patents and business of the Meili-Blumberg Co., of New Holstein, Wis. The attached-sliding-single-clamp vulcanizer which the latter company manufactured will be continued and marketed as the Badger Steam Vulcanizer. The plant in Appleton will be enlarged.

The Motor Supply & Tire Co., of Columbus, O., has purchased the Motor Supply Shop, located at 23 East Long street, and formerly owned by Perry B. Whitsit; the Motor Supply & Tire Co., which maintains branch stores in several cities, is erecting a four-story building for its occupancy at 128 East Gay street. A. I. Fishbaugh has been made manager of its Columbus business.

The Independent Auto Repair Co. has been formed in St. Louis, and will operate at 1215 Chestnut street; Archibald Chisholm is president of the company and James De Courcy manager. The company will operate what formerly was the Maxwell and Marion service station and which at that time was under the management of De Courcy.

Paul G. Milbrath, one of the pioneers of the trade in Milwaukee, has purchased the National Avenue Garage. at 704-8 National avenue; he entered the trade in 1901 with the Jonas Automobile Co., in 1905 became dealer in Cleveland and Reliance cars, and since 1906 had been service manager for the Kissel Kar Co., of Milwaukee.

A. S. Clause and Grant Jones have entered the trade in Youngstown, O., under the style Automobile Service Co. They have leased the Square Deal Garage at Belmont avenue and Burke street and will make a specialty of charging and caring for electric cars and of caring for electric systems.

The Holliday-Benkert Automobile Co., of Monticello, Wis., has been reorganized under the style Freitag, Benkert & Holliday; Henry F. Freitag, owner of the Monticello Livery Co., has purchased a one-third interest in the company, which handles Chevrolet cars.

George Wagner, who has been employed as a tire repairman in Grand Rapids, Mich., for some time, has branched out for himself; he has formed the Cen-

tral Vulcanizing Co. and has located at 228 Ottawa avenue. Besides specializing in tire repairs he will stock tires and accessories.

R. D. Smith and M. J. Hubbard, of Cedar Rapids, Ia., have organized the Hubbard-Smith Auto Co. and will open a garage; the company plans to install battery charging apparatus, a steam vulcanizing plant and a sidewalk outfit for the dispensing of air, water and gasolene.

The Bruening Bros. Automobile Co., of Kansas City, Mo., has opened a downtown salesroom at 1712 Grand avenue; the garage and service station at Armour boulevard and Broadway, where the company has sold Apperson cars and Waverley electrics, will be retained.

Walter B. McCormick has sold to Chas. E. Moots, formerly of Leroy, Ill., his interest in the McCormick-Murray Mfg. & Automobile Supply Co., located at 207 North East street, Bloomington, Ill. The consideration was \$15,000 and included all except 18 shares of stock.

The O. K. Garage, of Gainesville, Fla., formerly occupied by the Swearingen Auto Co., has been taken over by H. L. Dean, of Winter Haven, Fla., and C. B. White, of Auburndale, Fla. Both men have operated garages and repair-shops in their respective towns.

H. E. Clayton and H. T. Ritter, of Lee's Summit, Mo., have formed the Clayton Machine Works and will conduct a garage and an agency for Ford cars; they have purchased a site and will erect a building for their occupancy, 60 x 94 feet.

Louis B. Krafts, Cadillac dealer in Kalamazoo, Mich., has retired from that business; he is succeeded by John M. Van Loon, formerly a salesman under Krafts. Krafts also was secretary of the Kalamazoo Automobile Dealers' Association.

James Mudie, now in charge of the battery department of the Bernhard & Turner Auto Co., of Des Moines, Ia., is about to branch out for himself; he will establish a battery repair business at 413 12th street.

Lea Beaty, of Lockhart, Tex., has purchased a livery stable at East Market and Rio Grande streets and will raze



it and erect a brick and steel garage, 60 x 125 feet; it will have two repair pits and space for 100 cars.

H. Collins is about to enter the trade in Indianapolis with a branch of the Fred E. Castle Co., of Detroit, the successor to the Castle & Monson Co. The latter handles E. & J. lamps, Mayo radiators and Rand windshields.

Taubert & Tucker is the style of a new garage business in Minneapolis; it is located at 191-95 Western avenue. Both men have served with the Columbus Buggy Co. as mechanics.

Charles Miller, proprietor of the West Side Auto Co., of Minneapolis, has secured the Ford agency for that section of the city; he maintains a large garage at 14 28th street west.

W. T. Rice has entered the trade in Chicago at 2120 Michigan avenue; he will handle Peugeots. He formerly was the head of the Rice Mine & Mill Supply Co.

The Davidson Auto Co. has taken over the business and equipment of the Hawkeye Motor Car Co., in Burlington, Ia. The company handles Cadillac and Buick cars.

The G. W. Bobb Co., of Columbus, O., will erect a four-story garage, 112 x 160 feet; a small repair-shop will be operated in connection with it.

- J. P. Taylor has purchased the Hamilton (O.) Auto Co. G. Pringle and Fred Irwin, the former owners, have retired from the trade.
- R. R. Schweizer, of Tucson, Ariz., has formed a company to take over the Ronstadt Co. The latter maintains sales-rooms and a garage.
- J. H. McGraw, of Bellaire, O., has entered the trade; he has secured the Saxon agency and will open salesrooms about March 1.

Dewey Brondyke, of Fulton, Ia., is opening a garage and salesrooms; he has the Ford agency.

James F. McGee is to build a garage in Washington, D. C., at 1531 M street; it will cost \$16,000.

Ralph Evans and Edward Boyer, of Galion, O., are about to open a garage and repair-shop.

Shank Bros. have purchased the M. & M. Garage in Huntington, W. Va. They will operate it.

Alexander Cameron and Irving Callahan are about to open a garage in Eau Claire, Wis.

Clayton M. Albright, of Wilmington, Del., has secured permission to erect a garage.

# PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few Leave the Industry.

Arthur Holmes, recently elected vicepresident of the Franklin Automobile Co., of Syracuse, has taken charge of the Sales department. He succeeds J. G. Barker, resigned.

H. J. Galvin, who has been connected with the Remy Electric Co. for several years, has been appointed manager of the Remy San Francisco branch; he succeeds P. E. Kempton.

James H. Reed has been appointed manager of the Los Angeles branch of the Savage Tire Co., of San Diego. Cal. Previously he was manager of the Pennsylvania Rubber Co.'s depot in Los Angeles.

E. Q. Cordner, one of the veterans of the industry, has been appointed manager of the Chicago branch of the American Voiturette Co., and as such will direct the sale of Car-Nation and Keeton cars in that territory.

Moore Kelly has been appointed manager of the Byrne-Kingston company's Detroit branch. He succeeds F. J. Alvin, who resigned to become sales manager of the Sears-Cross Co., which makes the speedometer of that name.

- C. W. Richards has been appointed superintendent of production of the Driggs-Seabury Ordnance Corporation plant in Sharon, Pa., a position which just has been created. Previously Richards was connected with the Stevens-Duryea Co.
- R. G. Betts, who has been intimately identified with Motor World since its inception 14 years ago, during ten of which he served as its editor, has resigned that post. He has been connected with trade journalism for 25 years and during his more than 20 years as an editor always gave the best that was in him
- A. Ellsworth Jackson, for several years Milwaukee manager for S. F. Bowser & Co., of Fort Wayne, Ind., has resigned that post to become Wisconsin representative of the Wallmann Mfg. Co., of Milwaukee, which also manufactures gasolene pumps, tanks, etc. Jackson will devote himself to the automobile end of the Wallmann business.

Oliver P. Riley has been appointed a district sales supervisor of the Briscoe

Motor Co., of New York City and Jackson, Mich. Riley, who is a member of the firm Riley Bros., of Bridgetown, N. J., will have direction of the sale of the Briscoe car in New Jersey, Maryland, Virginia and parts of Pennsylvania and West Virginia. He will make his headquarters in New York.

George Uihlein, of Milwaukee, principal owner of the Universal Motor Truck Co., of Detroit, has established head-quarters in the latter city and taken personal charge of the management of the Universal affairs. He is performing most of the duties previously carried by F. K. Parke, former general manager, and E. L. Brush, former assistant secretary, who have relinquished connection with the Detroit enterprise.

Midgley Forms Another Tire Company.

Thomas Midgley who, after long association, parted from the Hartford Rubber Works Co., several years since is sponsor for the Midgley Tire & Rubber Co., which recently was incorporated under the laws of West Virginia with an authorized capital of \$500,000. Midgley who during recent years has resided near Columbus, O., hopes to locate his new tire plant in that city. It is stated that a number of Pittsburghers are interested in the project.

English Charter for Cox French Co.

The Cox Brass Mfg. Co. (France).
Ltd., has been incorporated under the laws of England with a capital of \$25.000 in \$25 shares. It is, of course, an offshoot of the Cox company, of Albany.
N. Y., but, as stated in its English charter, the purpose of the Cox French company is to adopt an agreement between the Cox Brass Mfg. Co., Ltd., of Glasgow, and J. Collis & Sons. of London.

Benham Buys Remains of S. & M.

The Benham Mfg. Co., of Detroit.

which only last month took over the S.

& M. six-cylinder car made by the shortlived S. & M. Motor Car Co., has pur
chased the S. & M. plant at receiver's

sale for \$1.850. The plant was set up in

a factory owned by the Benham people,

who are continuing the car, having re
named it the Benham "Six."

Authorized to Assume Name Fischer.

The Motor & Gear Improvement Co. of New York, which controls the American rights of the German Fischer engine, has been duly authorized by the Supreme Court of New York to change its name to the Fischer Motor Corporation; the change will become effective March 5th.





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## QUALITIES THAT MAKE SALESMEN.

Much is rightly made of the part which enthusiasm plays in the world's affairs—in the world of commerce—in the sale of automobiles, for instance. Enthusiasm will sell goods when nearly all else fails.

The trouble with enthusiasm is that it is too often blind and it is not always easy to keep it aflame. Too frequently it is little more than a spurt, or a series of spurts. If a man lacks faith, lacks confidence in the goods he sells, his enthusiasm, soon or late, wears itself out. It is a fair statement, therefore, that confidence surpasses enthusiasm, for confidence is the basis of credit, and credit, we are told, is the basis of business.

When one has confidence in what he sells he can remain enthusiastic, or, at any rate, retain earnestness, which, in the long run, makes more sales than enthusiasm pure and simple. While enthusiasm frequently carries men off their feet, earnestness impresses them, and when sincere earnestness, born of confidence, is brought to bear, the future of any business is safe. It was this trait which caused the judges of Motor World's recent "Best Sale" competition to bestow the chief award on the man whose methods proved his confidence in the car he sold, and it is this virtue of confidence that it should be the effort of every princi-

pal or department head to instill in his sales staff; if he cannot instill it, he is unfortunate, indeed.

Words of themselves mean little; how they are said means much. When they are backed by earnest confidence, they rarely fail of effect. The salesman who loves his work and his goods and who is imbued with the sincere belief that the world holds nothing so good as that which he offers for sale is the man who is equipped to achieve results and to retain his self-respect while doing so; he knows "where he is at"; he does not have to stultify himself; his words come easily and convincingly; he is not icrever offering excuses, apologies or explanations; he is sure of his ground and glories in it. On the other hand, the salesman who does not believe what he himself says, whose half-heartedness belies his words and who, indeed, secretly believes he is selling a gilded brick, is far too numerous-a truth too seldom recognized.

When sales lag, it is well for those in authority to seek to discover whether in one place, or in many places, there are those who lack confidence—who lack the faith and conviction that carry all before them—and having found it to learn why such an essential business virtue is lacking. Such knowledge frequently means the difference between success and failure or merely partial success.

#### PRACTICE THAT INVITES IMPOSITION.

Despite the popularity of the slogan, "The customer is always right," many of those who repeat it are well aware that it falls short of the truth but, despite the fact, and because of the effort to retain good-will, they permit themselves to be imposed on.

While the majority of customers may be honest, or fairly disposed, the not inconsiderable minority considers it "smart," or "clever," or a real achievement to "get the better of the other fellow," no matter how.

In the many branches of the automobile business, it is safe to say that none more often encounters this too numerous individual than the tire manufacturer and the tire dealer. The practice of "making adjustments," which has grown up, has given unusual latitude for the display of such "cleverness."

The enormity of this sort of thing is rarely known to other than those affected. It therefore probably will surprise most people to learn that a single tire manufacturer last year made nearly 184,000 adjustments on casings and tubes, only eight per cent. of which were for defective goods. In other words, 92 per cent. of the adjustments were merely "policy adjustments"—that is, adjustments designed to retain good-will, in line with the notion "The customer is always right."

In consequence, it is not strange that tire makers should be showing signs of rebelling against such a state of affairs, and that one of them, at least, has taken a stand again unjust adjustments. It will be surprising if others do not do likewise.

When it begins to eat largely into profits, and to really invite imposition, the doctrine, "The customer is always right," loses its force and requires revision.

# FLOODS POSTPONE RACES BUT PRACTICE CONTINUES

Disrupted Railroad Facilities, Not Wet Track, Causes Road Classics to be Put Off—Phenomenal Practice Laps.

The climate may be the thing in California, but they have been having rather more climate during the past week than they can comfortably stomach, so to speak. At least, they have been having altogether too much of one of the ingredients of climate-which is moisture. To say it has rained would be putting it mildly. But it has not been the wet course that has caused postponement of the Vanderbilt and the Grand Prize until today (Thursday) and Saturday, respectively, as much as it has been the disrupted railroad facilities. And of course it would not be possible to stage a real race without spectators. So both races were put off.

As a matter of fact, the rain has had practically no effect in stopping practice and that the course is in truly excellent condition is made plain by the fact that some of the more daring of the drivers have had several tilts with old Father Time that bodes evil for Tetzlaff's world's record performance. Tetzlaff himself is credited with making the fastest lap over the eight mile circuit, rail birds catching him in 5:45, which is at the rate of about 88 miles an hour. Tetzlaff won't drive in the Vanderbilt.

Among the Vanderbilt entrants, Pullen and his Mercer have made the fastest circuit, his time being 5:51, which is about 86 miles an hour. Oldfield, too. has been doing some fast practice laps. clocks along the course crediting him with anything from 5:56 to 5:59-between 83 and 85 miles an hour; Carlson, in one of the Masons, went around in six minutes flat, which is 84 miles an hour; Richenbacker trailed him in the other Mason at practically the same speed; and Goerimann, the "dark horse." with his Touraine, toured over the route in 6:31, which is about 771/2 miles an hour. Practically without exception all of the drivers have exceeded the time set up by Tetzlaff last year.

With one exception there have been no changes in the line ups for both races. That one exception concerns the much-heralded Delage car which was entered by Mrs. L. K. Northam, who nominated Omar Toft to drive it. No one seems to know just where the car is at present. It is supposed to be on the course, but

it is not there. New York customs officials state that they have no record of a Delage car ever having been imported or shipped in bond, or otherwise, to Los Angeles. Wells-Fargo express officials, on the other hand, are quoted as saving that the car has passed through Albuquerque on the Santa Fe en route to Los Angeles and so it ought to be on hand by this time. But it has not put in an appearance as yet. Also there is no little confusion over who is going to pilot the car if it does show up. Toft was supposed to hold its wheel, but Mrs. Northam is said to have ousted him in favor of Bert Dingley. And now the story is being circulated that Toft deliberately delayed the shipment of the car from New York out of pique.

But if the Delage, which is fairly well known abroad, is started, no matter who drives it, there won't be any chance of overlooking it. For the first time; permission has been granted for the blazoning of the names of the contesting cars on both sides of the hoods.

### Cyclecar Shares for 25 Cents Each!

Have you nerve to invest \$10? If you have, W. M. Sheridan, a Chicago investment broken, who asks the question, is ready to receive it. Sheridan is selling stock of the Woods Mobilette Co., of Chicago, which makes the cyclecar of that name, and the \$10 will pay for 40 shares. When he sends his stock certificate, he will also accompany it with a guarantee of W. M. Sheridan & Co. to take the stock off your hands at any time within six months. If this generous offer is not sufficient, Sheridan will give you a 60-day option on 2,000 shares of Woods Mobilette stock at the magnificent price of 25 cents per share.

Sheridan's enticing offers are contained in two-page typewritten letters, addressed in friendly fashion to "My dear Mr. ——." which are being scattered broadcast. Meanwhile, the Woods publicity manager is similarly scattering broadcast an invitation to all towns that desire a factory "located in their midsts" to come to the front and tell what they have to offer. He intimates that the Woods company may establish two or three, or more, such plants.

The company is the one which only a few weeks ago was reported "full up with orders." and is the same whose printed matter points out that one of the advantages of cyclecars is that they may be driven up the front stoop, or up two or three flights of stairs, and stored under the kitchen table, or in any other odd corner, while they are almost as inexpensive to keep as a cat or a canary.



Feb. 21, Los Angeles, Cal.—Vanderbilt road race under auspices of the Western Automobile Association over Santa Monica course.

Feb. 21-March 4, Cincinnati, O.—Automobile Dealers' Association's show in the Music Hall.

Feb. 22-March 1, Hartford, Conn-Hartford Automobile Dealers' Association's show in Park Casino.

Feb. 23, Los Angeles, Cal.—Grand Prize road race under auspices of Western Automobile Association over Santa Monica course.

Feb. 23-25, Albany, N. Y.—Albany Automobile Dealers' Association's commercial vehicle show in the Armory.

Feb. 23-28, Omaha, Neb.—Omaha Automobile Show Association's show.

Feb. 24-28, Syracuse, N. Y.—Syracuse Automobile Dealers' Association's sixth annual show in State Armory.

March 2, 3, 4, Cincinnati, O.—Automobile Dealers' Association's commercial vehicle show in Music Hall.

March 2-7, Utica, N. Y.—Utica Automobile Club's automobile show in the State Armory.

March 3-6, Grand Forks, N. D.-Fifth annual show in the Auditorium.

March 3-7, Fort Dodge, Ia.—Fort Dodge Dealers' Association's third annual show in the State Armory.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics' Building.

March 9-14, Des Moines, Ia.—Automobile Dealers' Association's annual show.

Mar. 14-21, Harrisburg, Pa.—Harrisburg Automobile Dealers' Association's fifth annual show.

March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics' Building.

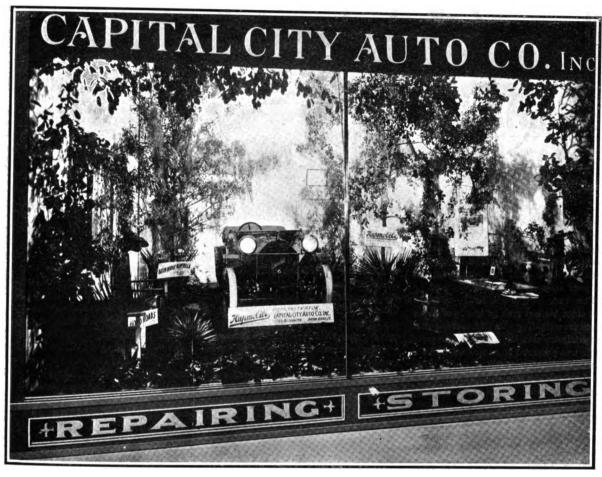
March 21-28, St. John, N. B.—New Brunswick Automobile Association's Maritime show in the Armoury.

March 27-28, Racine, Wis.—Racine Automobile & Motorcycle Association's show in Lakeside Auditorium.

April 9-15, Manchester, N. H.—Automobile show.

## CASHING IN WITH "CURRENT EVENTS" WINDOW

Good Roads Movement in a Louisiana County Made the Keynote of An Attractive Window Display—Dealer Even Produced a Bona Fide Sample of the Roads to Be Built and Had a Real Car on It.



BATON ROUGE DEALER'S REPRODUCTION IN HIS WINDOW OF PROPOSED GOOD ROADS

When the city of Baton Rouge, La., recently voted an appropriation for good roads the automobile dealers in that section congratulated themselves upon the boost that better highways would give the automobile business in general, but not all of them grasped the opportunity for immediate benefit as did the Central City Auto Co., Inc., the Hupmobile distributer in that State.

The good roads building would not. of course, commence for some time, but this company proceeded the very next day to make capital of the result of the election; it at once brought itself into the public eye through a novel "good roads" window display that won attention because of its timeliness and attract-

iveness. The majority of dealers recognize the value of seasonal window displays at Christmas and other times, but the Central City window demonstrates the value that may be drawn from many current events.

As a starter, the manager sent out for a load of gravel—maybe two. With this he began some distance back from the window and constructed a smooth highway right up to the glass; the material he used was that which is to be employed in the construction of Baton Rouge county's new roads, and all the way through he aimed to make his little road look as nearly as possible like the real thing. The sides of the gravel road were sodded and banked with palmetto;

leaves were strewn about; trees were erected; a bush was stuck in here and there and there and the vines in which the Southland abounds formed a border for the picture.

The whole scene was very realistic, but the final touch was added when a Hupmobile touring car was placed upon the gravel road, not too far into the foreground but in just the right position to fill in the background.

Appropriate placards were posted and in one front corner in the midst of the foliage were a desk, chair and telephone which seemed to say that while the Central City Auto Co. knows how to trim windows it also is not overlooking any business.



## SCALING THE BARBED WALL

Purchasing Agent's Refusal to Listen
Proved No Obstacle to One Salesman — How He "Got the Old
Man's Ear" and a Sale.

A salesman had called regularly at a big Toledo factory and had been just as regularly turned down by the purchasing agent, whose usual message as he sent back the card was "All contracted for on your material for a year to come."

This time he got the usual message. But since his last visit he had been doing some investigating; he had learned that the company was paying the same price as he was prepared to quote, but was not getting as good a quality of stock. What was the use of this information if the purchasing agent would not see him? And yet, his goods would save the company no end of trouble.

## Was Turned Down Second Time.

He decided to call up the purchasing agent by 'phone. He did so. The reply was, "You got my message, didn't you? Well, we don't care to discuss the matter any further just now. Good bye."

The salesman ruminated for a few moments. Then he went back to the factory. He climbed the stairs to the second story where the president was quartered. Giving his card to the boy, he sent it in to the president. "The president is too busy to see you this morning," said the boy.

The salesman took out his fountain pen and wrote on the back of his card: "I will give you an idea that will be worth thousands of dollars to your salesmen if you will see me."

"I'll bet you a dollar you're afraid to take that in," he said to the big-eyed office boy. "Put your money up," said the boy, and he was off like a shot. Out he came, followed by the president. "Come right into my office," said the president. "Now, what have you got on your mind?"

"I promised to give you an idea that will be worth thousands of dollars to your salesmen, but before I do it I want to ask that you give me five minutes afterwards to tell my own story."

"You can have it. Go ahead," said the president.

"Well, here's the idea: If any of your salesmen are calling on the trade and find that the purchasing agent won't see them, tell them to ask for the president—and get their story before him. He will listen to it because he is interested in the dividends. That's all. Can I have my five minutes?" queried the salesman.

The president was very much interested. He laughed quietly. But he told the salesman to fire away. The salesman told his story quickly. He was invited to call again, and when the new contract was made it was with his company.

## FAVORS MAKING THE "BARGAIN" AD. TRUTHFUL

Taking the public into the confidence of a business house has proved its value before now, but that it should apply in every instance and would work to advantage is asserted by a merchandiser of the Middle West. He contends that the time is not far distant when the "bargain" must be accompanied by a logical, truthful explanation in order to possess advertising "pull."

"If I had my way," he said, "I would publish in our papers a statement from time to time showing just where we stands as to costs and profits. Five per cent. is a large enough net profit for any merchant who does any great volume of business, and there is a very comfortable living in store for the merchant who finally realizes this.

"I would also go in for more frank-

ness in sale advertising. If I had a sale of suits on, for instance, I would advertise them something like this: These suits were bought early this year from one of the best known manufacturers in the country. They cost us \$16.50 at wholesale, and we have been selling them at \$22.50 to \$25.

"Because we chose a few colors that did not meet popular demand, we are obliged to sell these suits at cost, plus 20 per cent., which is the cost of doing business in this store. Please note that we are not marking the regular price up \$5 or \$10 a suit, and then slashing the sale price back to cost plus 50 per cent. You are getting a real bargain here, for we are not making a cent on a suit we offer. Neither are we accepting a loss."

"I think that the majority of people are capable of recognizing the truth when they see it, and I am sure that they have been 'buncoed' so often that the truth would prove a magnet of unusual drawing power."

## Points of View Which Differ.

The advertising manager says: "When the factory paid for the ads the dealers said they were too small and were not run often enough. Later on, when we had an arrangement by which they were charged to the dealers, the same schedule looked awfully big to the dealers. Many of them wanted to know 'if we were buying the paper.' Others wanted to know if we couldn't furnish smaller copy. It makes a difference who pays for it!"

A square man is square all the time. You cannot be crooked part of the time and square the rest of the time—and get away with it. People will gradually learn the two ways and be afraid to do business with you for fear they might get hold of the crooked end.



## DRESSING UP THE SALESROOM

Making It Look Attractive and "Different" One Way of Winning Attention—What Imagination and Study
Have Done and Can Do.

The idea of supplementary decorations of some kind in automobile sales-rooms is growing. One man uses palms, ferns and plants of that sort, and another uses rugs and fancy chairs and tables; again, another dealer strives for unusual lighting effects. All of it is good and all an advance toward better merchandising ideals.

Without a doubt the hardware merchants of this country have the best dressed windows, everything considered, outside the department store trade. That means they appreciated what opportunities their windows offer and study to secure new and attractive effects. One of the most conspicuous features of the hardware merchant's windows is their cleanness. You will go a long way before you will see the window glass as immaculate and highly polished as it is in the windows of the average hardware store.

## Why Hardware Man's Windows Excel.

The average automobile dealer has much better windows than the average hardware merchant, as far as construction goes—and that is a long way—but, the average automobile dealer does not give one-tenth the thought to his window or salesroom display that the hardware merchant devotes to the matter. Yet they are both appealing to the same public. And there is no reason under the sun why the automobile merchant should not lead all the rest when it comes to window display. Life, action, interest are what are demanded. Imagination exercised for a short time will quickly

bring to the mind a hundred different ways in which an automobile exhibit could be made more attractive without any great additional expense.

The magazines teem with illustrations in which the motor car plays a prominent part. Surely from all of these, as well as from one's own experience, can be drawn ample material for interesting the public in window displays.

#### Add to the Natural Attractiveness.

"What do you mean? Reproduce fishing scenes, hunting scenes, touring effects?" Yes, that is exactly what is meant. The idea is to stage the automobile among surroundings that will draw more interest to your windows than the ordinary, every-day display of your competitor draws to his. "What's the use?" you say; "that won't sell cars." No, indeed, it will not sell cars, but it will draw people to your windows and into your store and it will show them that you are a live one, and don't people like to do business with the firm that is live and up and doing? With the famous advertisement for Sapolio, we say, "Don't argue-try it."

## HOW MAPPING OUT WORK SERVES TO PROMOTE SALES

"I have a darned sight more confidence in that man than I ever had before," said a sales manager, speaking about one of his men. "And do you know the reason?" he continued. "He has his work laid out. He showed me a book where his work was laid out almost to the hour for two weeks. He had it all in black and white—whom he wanted to see and when he expected to see them. Of course, I know it would be impossible for him to stick absolutely to his program. He would beat it some days; other days it would be too much for him, but I know by experience that the man

with a program—who knows just where he wants to go and knows when he is going, stands a hundred per cent. better chance of getting business than the fellow who maps his work from hour to hour or even from day to day."

All of which recalls that you map out the expenditure of your money (if you are wise). Why, then, shouldn't you map out the expenditure of your time? And why shouldn't you do it for a week at a time. Then when you have in mind Monday what you are going to do next Friday you will get something from Monday's experiences that is surely going to help you on Friday or one of the other days.

## SEEKING PROSPECTS WHILE IN THE RAILROAD COACH

There is an automobile dealer in Detroit who does quite a bit of traveling in the State. Not a week goes by that he does not cover some territory, and, as he has lived in Detroit for years, he knows a large number of people.

On almost every train that brings him back to Detroit he is sure to meet some prospect for a car. He usually manages to steer conversation towards automobiles without much difficulty, and thus learns much that is valuable. Incidentally, he always has a car at the station to meet him and take him home and always one, two or three of the men whom he has met on the train go driving homeward with him.

Not a few sales have been made as a result of this little courtesy. One of the men he has picked up is sure to be impressed by the smoothness of riding, the silence of the engine and so on; and most of the men whom he thus quietly approaches are glad to talk car with him.

Let nothing be wasted, is this dealer's motto, and so he makes the trip and the ride homeward count for business.

## **OUARTELY MEETINGS FOR** S. A. E. STANDARDS WORK

Number of Gatherings in Year Doubled and Two New Divisions Added-Personnel of Committee Revised.

With a view to furthering the work of standardization that is being carried on by the various divisions of the Standards Committee of the Society of Automobile Engineers, meetings of the committee as a whole hereafter will be held quarterly instead of semi-annually, as has been the practice in the past. The first quarterly meeting has been set to occur during Tuesday, Wednesday and Thursday, April 7th, 8th and 9th.

Action altering the time of the meetings, which heretofore always have been held just prior to the regular winter and summer professional sessions, was taken at the last meeting of the council of the society, which was held at the society headquarters in New York on the 11th inst. At the same time, two new divisions were created-Research and Electric Vehicle-and four, which have served their purpose, were discontinued for the time being; they are the Gear Tooth Shapes division, the Joint Standard division, the Technical Index division and the Sheet Metals division.

In accordance with the custom to revise annually the personnel of the Standards Committee, some few changes were made in the membership of the various divisions that will serve during President H. M. Leland's administration. The new committees that were appointed are practically the same as the old, and are as follows:

Standards Committee. Henry Souther, Chairman.

Aluminum and Copper Alloys.
William H. Barr, Lumen Bearing Co., Chairman: Jerome J. Aull, Lunkenheimer Co.; Geo. W. Dunham, Chalmers Motor Co.; E. S. Fretz, Light Míg. & Foundry Co.; Geo. M. Holley, Holley Bros. Co.

Ball and Roller Bearings.

Howard Marmon, Nordyke & Marmon, Chairman; David Fergusson, Pierce-Arrow Motor Car Co.; F. M. Germane, Standard Roller Bearing Co.; B. D. Gray, Hess-Bright Mfg. Co.; F. G. Hughes, New Departure Mfg. Co.: F. J. Jarosch, J. S. Bretz Co.; M. T. Lothrop, Timken Roller Bearing Co.; A. L. Riker, Locomobile Co. of

Broaches.

C. W. Spicer, Spicer Mfg. Co., Chairman; J. F. Barr, Gear Grinding Machine Co.; F. L. Eberhardt, Gould & Eberhardt; Ralph R. Lapointe, Lapointe Machine Tool Co.; G. E. Merryweather, Motch & Merryweather; E. C. Peck, Cleveland Twist Drill Co.; G. A. Weidely, Premier Motor Mfg. Co.

Carburetter Fittings.

G. G. Behn, Hudson Motor Car Co., Chairman; Jerome J. Aull, Lunkenheimer Co.; George M. Holley, Holley Bros. Co.; Howard Marmon, Nordyke & Marmon; C. W. Stiger, Stromberg Motor Devices Co.; E. E. Sweet, Cadillac Motor Car Co.

Commercial Car Wheels,

Wm. P. Kennedy, Chairman; J. A. Anglada; H. D. Church, Packard Motor Car Co.: C. B. Hayes, Hayes Wheel Co.; Russell Hoopes, Hoopes Bros. & Darlington, Inc.; A. M. Laycock, Sheldon Axle Co.; J. Morat, I. G. Johnson & Co.; A. J. Scaife, The White Co.; A. J. Slade; Charles L. Schwarz; E. R. Whitney, Com-mercial Truck Co. of America; C. B. Whittelsey, Hartford Rubber Works Co.

Data Sheets

B. D. Gary, Hess-Bright Mfg. Co., Chairman; A. M. Dean, Palmer & Singer Mfg. Co.; J. H. Hertner, Rauch & Lang; Wm. V. Lowe, Hess-Bright Mfg. Co.; Harold L. Pope, Pope Mfg. Co.; Henry Souther, Standard Roller Bearing Co.

Electrical Equipment. A. L. Riker, Locomobile Co. of America, Chairman; V. G. Apple, Apple Electric Co.; Behn, Hudson Motor Car Co.; W. L. Bliss, U. S. Light & Heating Co.; C. M. Bunnell. General Electric Co.; W. H. Conant, Gould Storage Battery Co.; Frank Conrad, Westinghouse E. & M. Co.; David Fergusson, Pierce-Arrow Motor Car Co.; Edward A. Halbleib, North East Electric Co.; Russell Huff, Packard Motor Car Co.; Leonard Kebler, Ward Leonard Electric Co.; Alden L. McMurtry; R. J. Nightingale, Willard Storage Battery Co.; Wm. H. Palmer, Jr., Electric Storage Battery Co.; G. R. Wadsworth, Gray &

Electric Vehicles.

J. R. Coleman, Atterbury Motor Car Co.; R. S. Fend, Woods Motor Vehicle Co.; Emil Gruen-feldt, Baker Motor Vehicle Co.; J. H. Hertner, Rauch & Lang; Benj. Jerome, Couple Gear Couple Gear Freight Wheel Co.; Wm. P. Kennedy; J. M. Lansden, General Motors Truck Co.; Ernest Lunn, Walker Vehicle Co.; A. J. Slade; W. J. B. Thomas, Century Electric Car Co.; P. D. Wag-oner, General Vehicle Co.; C. A. Ward, Ward Motor Vehicle Co.; E. R. Whitney, Commercial Truck Co. of America.

Frame Sections

J. G. Perrin, Lozier Motor Co., Chairman; C. E. Clemens, Perfection Spring Co.; A. L. Riker, Locomobile Co. of America; W. R. Strickland, Peerless Motor Car Co.

Iron and Steel.

Henry Souther, Chairman; W. P. Barba, Mid-vale Steel Cc.; F. D. Carney, Pennsylvania Steel Co.; E. L. French, Sanderson Bros. Works, Crucible Steel Co.; G. F. Fuller, Wyman & Gordon; Arthur Holmes, H. H. Franklin Mfg. Co.; J. A. Mathews, Halcomb Steel Co.; George L. Norris, American Vanadium Co.; J. H. Parker, Carpenter Steel Co.; E. F. Russell; C. F. W. Rys, Carnegie Steel Co.; Thomas Towne; F. W. Trabold, J. H. Williams & Co.; K. W. Zimmerschied, General Motors Co. Lock Washers

J. E. Wilson, National Lock Washer Co., Chairman; C. E. Davis; E. W. Hart, Hobbs Manufacturing Co.; F. S. Sayre, Positive Lock Washer

Miscellaneous.

John G. Utz, Perfection Spring Co., Chairman; G. G. Behn, Hudson Motor Car Co.; Herbert Chase, Automobile Club of America; E. H. Ehrman, Chicago Screw Co.; David Fergusson, Pierce Arrow Motor Car Co.; Arthur Holmes, H. H. Franklin Mfg. Co.; N. B. Pope; A. L. Riker, Locomobile Co. of America; E. E. Sweet, Cadillac Motor Car Co.

Motor Testing.

J. O. Heinze, Northway Motor & Mfg. Co., Chairman; R. C Carpenter, Professor Experimental Engineering, Cornell University; Herbert Chase, Laboratory Engineer, Automobile Club of America; H. L. Connell, Commercial Engineer-America; 11. L. Conneil, Commercial Engineering Laboratories Co.; Geo. W. Dunham, Chalmers Motor Co.; J. A. Moyer, Professor in Charge of Department of Mechanical Engineering, Pennsylvania State College; W. G. Wall, National Motor Vehicle Co.

Nomenclature.

Arthur B. Cumner, Chairman; A. L. Clough; H. E. Coffin, Hudson Motor Car Co.; T. J.

Fay, Rockefeller Motor Co.; P. M. Heldt: W. C. Marshall.

Pleasure Car Wheels

Henry Souther, Chairman; H. L. Barton, General Motors Co.; R. S. Bryant, Standard Welding Co.; C. C. Carlton, Firestone Tire & Rubber Co.; E. R. Hall, Goodyear Tire & Rubber Co.; Howard Marmon, Nordyke & Marmon: I. G. Vincent. Packard Motor Car Co.; C. B. Whittelsey, Hartford Rubber Works; C. B. Williams, Mott Wheel Works.

David L. Gallup, Professor Gas Engineering, Worcester Polytechnic Institute, Chairman; R. C. Carpenter, Professor Experimental Engineering. Cornell University; Walter T. Fishleigh, Assistant Professor Engineering Department, University of Michigan; Charles E. Lucke, Professor of Mechanical Engineering, Columbia University; James A. Moyer, Professor in Charge of Department of Mechanical Engineering. Pennsylvania State College; H. F. Thompson, Research Associate, Massachusetts Institute of Technology; C. B. Veal, Professor of Machine Design, Purdue University.

Seamless Steel Tubes

H. W. Alden, Timken-Detroit Axle Co., Chairman; H. L. Barton, General Motors Co.; J. Jay Dunn, Shelby Steel Tube Co.

Springs.

Harold L. Pope, Pope Mfg. Co., Chairman; Christian Girl, Perfection Spring Co.; David Lan-dau, Spring Department, Sheldon Axle Co.; Ralph L. Morgan; W. N. Newkirk, William & Harvey Rowland, Inc.; Mason P. Rumney, Detroit Steel Products Co.; A. C. Schulz, Locomobile Co. of America.

Truck Standards.

Wm. P. Kennedy, Chairman; B. B. Bachman, The Autocar Co.; H. D. Church, Packard Motor Car Co.; C. E. Clemens, Perfection Spring Co.; A. H. Ehle, Baldwin Locomotive Co.; Bruce Ford, Electric Storage Battery Co.; W. A. Frederick, Continental Motor Mfg. Co.; Robert McA. Lloyd; C. T. Myers; W. H. Roberts, Department of Finance, New York City; E. F. Russell; C. L. Schwarz; F. W. Trabold, J. H. Williams & Co.: E. R. Whitney, Commercial Truck Co. of America; C. B. Whittelsey, Hartford Rubber Works

## Creditors Seek Repairman's Assets.

Wallace S. Todd, a metropolitan repairman, having assigned to David L. Ostro for the benefit of his creditors, the creditors are trying to find out just how strong the benefit is; in their behalf Ostro this week filed suit in the Supreme Court for New York county against the Hudson Garage, of 220 West 41st street, claiming the garage owes Todd an unknown sum of money.

It is charged that early in 1910 Todd made an arrangement with the garage whereby he was to maintain his repairshop in the garage, the garage proprietors advancing him money and otherwise helping Todd run his business; he was to get two-thirds of the profits. It is claimed that this arrangement remained in effect between February 1 and October 31, 1910, and that in this period the garage collected a large sum of money for work which Todd did.

Much of this, it is claimed, never was turned over to Todd and Ostro, in behalf of the creditors, asks that the garage be compelled to render an accounting and pay over the money due.

## ITALIAN SETTING FOR BIGGER BOSTON SHOW

# Long List of Cars and Accessories To Be Displayed In Part Roman and Part Venetian "Atmosphere"—Outside of Building Also To Be Illuminated—Display to Hold Four Cars Not Staged Before.

Boston's Babylonian show with its Hanging Gardens and its waterfalls—to say nothing of the "Garden of a Century Ago"—and all the other embellishment that last year made the display pleasing to look upon, likely will live long in the memories of those who saw it. But if it does so, it won't be because those who formulated the decorative scheme for the exhibition that is to open on Saturday night, March 7th, have done anything to call back those gorgeous scenes. They have gone one better, as always has been the case, ever since Boston first adopted the scheme of uniform decorations.

"Nebuchadnezzer's Tribute to His Median Bride" has given place to "The Grand Canal of Venice," which is described as being 150 feet long and 40 feet high; the Egyptian motif in Grand Hall has given way to a Venetian one; and "The Garden of a Century Ago," which last year transformed Exhibition Hall, has become a Roman scene, though it is not likely that there will be anything severe about it. And under this riot of color more cars than ever, and more accessories, will be set out.

#### Exhibitor's List Bigger Than Ever.

For the first week, which is to be devoted exclusively to pleasure vehicles and accessories, there are upward of 250 exhibits, as against 234 at last year's show, and of them 81 hold cars; last year but 76 exhibitors showed cars. Just what the second week will bring forth—it is to be inaugurated three days after the pleasure vehicles have been rolled out, on Saturday night, March 14th—remains to be seen, though it is certain that there will not be anything but commercial vehicles on view, for Boston this year has the only "commercial vehicles exclusively" show.

But as elaborate as are the decorations inside the buildings, and if they are anything more attractive than they have been during the last two or three shows more than the adjective "elaborate" will be required to describe them, not all the time of the decorators has been spent between the walls and under the roof. For the first time, the outside of the buildings as well is to be "brilliantly illuminated in a manner distinctively new

and attractive." The tower, it is promised, will be "resplendent."

#### Roman Setting for Exhibition Hall.

If it were possible to describe all the decorations with a single phrase, it might be said that the general scheme is Italian. But judging from previous exhibitions, mere words scarcely will convey an adequate idea of the spectacle that will be unfolded. In the concrete, Exhibition Hall is to be Roman. There are to be marbelized panels between fluted pilasters topped with elliptical arches that will stretch across the entrance lobby, with whited Venuses—anyway, they are to be white statues—silhouetted against a dense background of foliage.

Inside the hall proper, the artist's imagination has been given freer rein. The beams and rafters are to be hidden by painted tablets and there will be a moulded cornice in true Roman style with the brackets concealed by masking pieces which will present all the appearance of carved marble. By way of defining the exhibition spaces and designating the exhibitors, there will be massive columns of verte antique bronze surmounted by illuminated glass globes.

The side walls of Exhibition Hall are to be given a marble cornice effect, with scenic paintings between the columns and the windows concealed by delicate Italian traceries. But the most spectacular part of the display is to be at the end of the hall where the stairway leads to the balcony. There is to be a brilliant electrical display set off by statuary and an immense bank of foliage and flowers, masking the staircase.

## Grand Venetian Canal in Grand Hall.

Grand Hall, as usual, will be the more gorgeous of the two, and it will prove a striking contrast to the design in Exhibition Hall. It is to be Venice to the life, even if the Grand Canal has no real water in it. Overhead there will be a great canopy pierced to give an openwork effect, and from it eight illuminated Venetian iron lanterns will depend with garlands of bright flowers hanging from the lamps and reaching almost to the heads of those who promenade the aisles.

The arches that nominally support the "sky" are to be studies adapted from the Ducal Palace and the balconies will be faced with carved decorations suggestive of Venetian canals. What is described as the "grand piece de resistance of the show"—the painting depicting "The Grand Canal of Venice"—will occupy the whole end wall opposite to the stage.

#### Four Cars Make First Appearance.

As far as the exhibits are concerned, it goes without saying that all of the wellknown makes of cars will be on hand, and in addition there are to be four brands, not counting one cyclecar, which did not appear at either the New York of the Chicago shows; they include the S. G. V., the Chevrolet, the Moyer and the Stanley steamer; the cyclecar is the Merz. Although the list of accessory exhibitors is longer than was the case last year, it is not by any means a "national list." the Motor and Accessory Manufacturers, Inc., having for the first time refused to sanction the Boston exhibition; as a result, there are many names in the list that are not readily recognizable. The show has become, in fact, more than ever a car dealers' and supplymen's show, and as such it is quite likely to reveal a wealth of accessories that failed to put in an appearance at either of the National shows. The complete list of car exhibitors is as follows:

American Cyclecar Co., Bridgeport, Conn.—Trumbull.

Anderson Electric Car Co., Boston, Mass.— Detroit electrics.

Allen Motor Co., Fostoria, O.-Allen.

American Voiturette Co., Detroit, Mich.—Car-Nation and Keeton.

Apperson Bros. Automobile Co., Kokomo, Ind.— Apperson.

Bowman Co., J. W., Boston, Mass.—Stevens-Duryea, S. G. V. and Waverley electrics.

Duryea, S. G. V. and Waverley electrics.

Bailey & Co., S. R., Boston, Mass.—Bailey electrics.

Buick Motor Co., Boston, Mass.—Buick.

Briscoe Motor Co., New York City—Briscoe.
Cadillac Automobile Co. of Boston, Boston,
Mass.—Cadillac.

Cole Motor Co. of Boston, Boston, Mass.—Cole.

Case T. M. Co., J. I., Boston, Mass.—Case.
Connell & McCone Co., Boston, Mass.—Overland.

Curtis-Hawkins Co., Boston, Mass.—Speedwell. Chevrolet Motor Co. of New England, Boston, Mass.—Chevrolet.

Cartercar Co., Pontiac, Mich.—Cartercar. Chandler Motor Car Co., Cleveland, O.—Chandler. Columbus Buggy Co., Columbus, O .- Firestone-Columbus

Dodge, Frank, Boston, Mass.—Buffalo electrics. Donovan Motor Car Co., Boston, Mass .- Studehaker

Dutton Motor Co., Inc., Boston, Mass.-Abbott-

Fuller, Alvin T., Boston, Mass.—Packard. Fiat Motor Sales Co., Boston, Mass .- Fiat. Ford Motor Co., Boston, Mass.—Ford. Franklin Motor Car Co., Boston, Mass.—Frank-

Garford Co., Elyria, O.—Willys-Knight. Haynes-Automobile Co., Kokomo, Ind.—Haynes. Henley-Kimball Co., Boston, Mass .- Hudson. Herreshoff Motor Sales Co., Boston, Mass .-Herreshoff.

Hollander Motor Co., Boston, Mass.-........... Hersf-Brooks Corp., Indianapolis, Ind.—Marathon and Hersf-Brooks.

Inter-State Automobile Co., Muncie, Ind .-- Inter-State

Imperial Automobile Co., Boston, Mass.-Impe-

Jackson Motor Car Co., Boston, Mass.-Jackson, Jeffery Co., Thos. B., Kenosha, Wis .- Jeffery. Knox Automobile Co., Boston, Mass.--Knox King Motor Car Co., Boston, Mass-King, Kissel Kar Co., Boston, Mass.-Kissel. Krit Motor Car Co., Detroit, Mich.-Krit. Vigne Cyclecar Co., Detroit, Mich .-- La

Locomobile Co. of America, Boston, Mass.-Loco-

mobile. Lawrence & Stanley Co., Boston, Mass.-Mitchell. Linscott Motor Co., Boston, Mass.—Reo. Lenox Motor Car Co., Boston, Mass.—Lenox.

Lexington-Howard Co., Connersville, Ind.-Lexington and Howard.

ozier Motor Co., Boston, Mass.-Lozier. MacAlman, J. H., Boston, Mass.-Stearns-Knight. Maguire Co., J. W., Boston, Mass.—Pierce-

Moyer, H. A., Syracuse, N. Y.—Moyer. Motor Car Mfg. Co., Boston, Mass.—Pathfinder. McFarlan Motor Co., Connersville, Ind.—McFarlan.

Mercury Cyclecar Co., Detroit, Mich .- Mercur, Moline Automobile Co., East Moline, Ill .-- Moline-Knight.

Marion Motor Car Co., Indianapolis, Ind.-Marion

Mercer Automobile Co., Trenton, N. J .- Mercer. Maxwell Motor Co., Detroit, Mich.-Maxwell. Merz Cyclecar Co., Indianapolis, Ind .- Merz.

Morse & Co., Alfred Cutler, Boston, Mass .-Mercedes and Renault.

National Motor Vehicle Co., Indianapolis, Ind .-Oldsmobile Co., Boston, Mass.—Oldsmobile.

Oldsmodile Co., Boston, Mass.—Oakland.
Ohio Electric Car Co., Toledo, O.—Ohio electric. Peerless Motor Car Co. of N. E., Boston, Mass.

Pope-Hartford Co. of Boston, Boston, Mass .--Pope-Hartford.

Premier Motor Car Co. of N. E., Boston, Mass .--Premier.

Paige-Detroit Motor Car Co., Detroit, Mich .-Paige-Detroit.

R. & L. Co., Boston, Mass.-Garford. Regal Motor Car Co., Detroit, Mich .- Regal. Stanley Motor Carriage Co., Newton, Mass .-Stanley steamer.

Stutz Motor Car Co., Boston, Mass.-Stutz. Saxon Motor Car Co., Detroit, Mich .- Saxon Tiffany Co., D. C., Boston, Mass.-Rauch & Lang

Twombly Car Corp., New York-Twombly cycle-

Victor Motor Car Co., Boston, Mass. Velie Motor Car Co., Moline, Ill.—Velie. Wentworth Fosdick Co., Boston, Mass.—Hupmo-

Winton Motor Car Co., Boston, Mass.-Winton. White Co., Boston, Mass.—White.
Whitten-Gilmore Co., Boston, Mass.—Chalmers

and Woods electrics.

Wing, Frank E., Boston, Mass.—Marmon. Westcott Motor Car Co. of Boston, Boston, Mass.-Westcott,

## **HOW SOME SALESMEN MAKE** THEIR OWN WORK HARDER

Enlarging on "What It's Made of" When Prospect Wants to Know "What it Can Do"-National Man's Suggestions.

"Motor car salesmen usually work hard to obtain results, but often it is this hard work that defeats their efforts; it's a paradox, but it describes the situation," remarked George M. Dickson, general manager of the National Motor Vehicle Co., in discussing salesmen and their ways. "Hard work, like electricity, can work well or ill, depending on how it is used and in what degree. Some salesmen 'electrocute' their prospects with too large a voltage of work.

"One of the best salesmen we havea dealer in a large city-sells cars as much by what he does not say as by that which he does say.

"Of course, a salesman must know his car, but it is just as vital that he use judgment in imparting this knowledge, both as to manner and quantity, to customers.

"It is well to remember it was the motor car people themselves who taught the public how to buy cars. It was the motor car people who are responsible for the fact that in many cases the public has been taught to follow a false prophet. The reform lies in the power of these same motor car sellers.

"Here's a concrete example to illustrate what I mean: A man of wealth and good tastes came to an automobile store to buy a \$3,500 car. His wife was with him. The salesman met them and began to talk about the car in question. When this man and his wife came to the store they were already practically 'sold.' Had the salesman been a little slower in his bombardment of sellingtalk; had he let the customer 'show his hand' first; had he bided his time and sized up the situation with a little better judgment and tact, he would not have lost the sale. This salesman was one of your 'hard workers,' too, but he worked hard at the wrong time in the wrong way. When he unlimbered he emitted a literal tirade of words in explanation of the car.

"The customer remarked: 'Of course, this car has a self-starter?' The salesman should have told him it had, then passed it by with an assurance that if a better starter was on the market the company making the car would use it; or words to that effect. Instead of doing

so, the salesman raised the hood, went into minute details and explanations of the starter; got into an argument with the prospect about certain mechanical things about which neither salesman nor customer were experts; spent 30 minutes trying to sell a \$3,500 whole car on the strength of the starter which cost a comparatively trivial sum. Instead of selling the entire car; instead of impressing upon the minds of the husband and wife the staunch, true and comfortable service the car would give them, he went off at a tangent and wore out his customers and ended by losing the sale of the car.

"The salesman really thought he had done a hard half-hour's work. And he had worked hard, but in the wrong way. He 'electrocuted' his prospect.

"It is also true that another prospect, in more or less of an engineering authority, might have appreciated the technical side of the starter. But the average buyer does not give a whoop about the technical side of that device. All he wants is assurance that by touching a button with the toe of his shoe the motor will start. All the average buyer cares about is the results to be obtained from the mechanical things-that is, unless all salesmen educate them into the wrong belief that they ought to try to go over a car with a fine tooth comb to make sure there are no mechanical mistakes in it.

"How foolish! The biggest thing a salesman working for us can sell a prospect is the name of the builders of the car. The factory behind the car, with its experts and enormous capacity for experimenting, has a good reason for every mechanical part in the car's make-up. It is possible that, for example, a certain axle may give 100 per cent. satisfaction on one car and the same axle of same material, design, weight, etc., be a failure on another car. Furthermore, why should the prospect be forced to work his head about the gears on the axle?

"The man who can sell the prospect a car without arousing his doubt to the thousand and one mechanical parts of the car, and sell him the car as a unit that is good, because the mechanical parts operating together make the results good, is one of the coming class of salesmen. Customers don't want to buy axles, transmissions or starters, just to have such mechanical things. They want them only in their proper place. doing their work properly. So sell the prospect the proper results. If the results suit the prospect, then of course the various component mechanical parts must be all right."

## STANDING UP UNDER THE FIRE OF CRITICISM

## Men Who Falter When Their Work Is Criticized and Thereby Halt Their Own Progress—Reilly and the Sales Manager Hear About An Ad Writer Who Unconsciously Stood in His Own Light.

There was a tense going-to-blow-up-in-a-minute look on the Advertising Manager's face as he flounced through the door of the Sales Manager's office. Only girls are supposed to "flounce," but the dictionary says a man can do so if he wants to, so the Advertising Manager with flounce No. 2 landed in a

ingly, but the Sales Manager again opened the check draft.

"What's he done?"

"He's touchy! So darned touchy that I can't look crosswise at him! I can't make him out at all," continued the advertising man. "I don't seem to be able to do anything with him at all."



THERE WAS A GOING TO BLOW-UP-IN-A-MINUTE LOOK ON THE MANAGER'S FACE

chair just as Reilly and the Sales Manager were in the midst of a conversation about everything and nothing in particular.

The conversation stopped like a "onelunger" on a hill and both men waited for what they could see coming; they were relieved, too, when the explosion was not so violent as they had expected. The principal trouble with the Advertising Manager was that he just had to tell somebody about it—relieve his mind, as it were.

#### Ad Man's Temperature Was High.

"Gee! That kid gets me wild! Phew!" and he mopped his brow, despite the fact that the thermostat was set at 70.

"What now? What now?" said the Sales Manager in an effort to make an opening for the explanation it was plain the Advertising Manager had to make to regain his normal condition.

"Can't tell him anything! Doesn't want to do anything except in his own way! Simply won't pull with the rest of the department! Just a bullhead, that's all!"

"Oh, is that all?" With this remark Reilly nearly fanned the flame, and the Advertising Manager looked deprecat"What's the particular trouble this morning?" gently inquired the Sales Manager.

"Well, I'll tell you." The Advertising Manager was quite calm by now. "Maybe it's my fault; I can't tell. There put that stuff over in good shape—if he wants to

"He goes to work and gets out the copy, and it was pretty good, too. But there were one or two changes I thought should be made. For one thing, I thought the introduction should be different; and there were a couple of changes in other spots. I told the Kid I thought he would improve it by making the changes and he immediately got peeved. He got glum and seemed hurt to think that I should attempt to criticize his work; maybe I'm wrong and maybe his way was right, but, damn it! I'm the one that's responsible, and I've got to back up my own judgment! As long as I've got to manage the department I've got to have things done in the way I think is best -or in the way some bigger man tells

### Grouch Instead of an Argument.

"Well, won't the Kid do it?" asked Reilly.

"Yes, and no," said the ad man, "he will and he won't; he goes back to his desk and goes about it in a grumbly. growly way; he doesn't give me an argument or even attempt to convince me



"HE GOT GLUM AND SEEMED HURT TO THINK I CRITICIZED HIS WORK"

are a whole lot of things that constitute the introduction to the story, but we'll pass over them and get to this morning's installment. We're getting out a booklet on that little road race one of our dealers won last week, and I gave the Kid the job of writing the copy; he's a clever little fellow and can

that he is right or that his way has more merit in it than mine. He just goes back and sits down in a grouch as much as to say, 'You poor simp! What's the use trying to do anything under you? You don't know good stuff when you see it!' I'd rather he would fly up and get mad or at least try to argue his point, but this

surly attitude is more than I can stand."
"Can't you do anything with him?"
asked the Sales Manager, seeming to
take a real interest in the situation.

"I don't know," was the despairing reply. "If I can't we'll have to let him go. I've tried to get under his hide and make him see things as he should, but I haven't been successful thus far."

"Why don't you give him a good talking to?" asked Reilly.

"I hate to do it, but maybe it's the only way out."

"How old is he?"

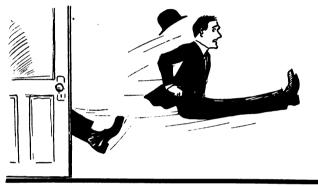
"Twenty."

"A-g-g-h!" grunted Reilly. "He's only a kid; he hasn't commenced to grow up yet. Give him a good talking to and tell him that if he can't stand criticism

of them come around into shape all right. And it isn't confined to workmen in the shop either; a salesman who was with me once for a short time was typical of the kind and he was about the only man I ever had with whom I couldn't do anything. I had to let him go. He couldn't stand criticism at all. When any criticism was made of his work he took it in the wrong spirit; instead of taking it as a pointer to a way to make his work better, he considered it hostile; he resented it and acted disgruntled—"

"That's just the way with that Kid!" exclaimed the Advertising Manager.

"One of the best illustrations I know of," continued Reilly, "was in connection with the system that used to be—and is yet—employed by the Stack Pencil peo-



"IF HE MAKES TOO MANY SLIPS THERE IS BUT ONE WAY-AND THAT IS OUT"

he can't expect to amount to a hill of beans as long as he lives. Show him where he's wrong and I bet he'll come around all right; he hasn't entirely got over the top of Fool's Hill yet."

"Maybe that's the best way."

## Advises Giving Man a "Talking To."

"It won't hurt to try it," commented the Sales Manager.

"It's about the only way," replied Reilly. "It will work in most cases, and when it won't work I don't know anything that will. I've found a number of such cases in my own business and I guess every man who ever had employes has stacked up against the same proposition more or less. There is a certain percentage of men who can't or won't stand criticism and they are a regular thorn between the ribs."

"Do you really meet such cases?" The Advertising Manager saw a chance of cashing in on somebody else's experience.

"Now and then," replied Reilly. "I have a case in the shop once in a while; about every so often we get a man who thinks he knows more about running the shop than the foreman knows, but most

ple; you know Haskett, the sales manager over there, don't you, Jim?"

"Quite well," replied the Sales Manager.

"Well," explained Reilly, "they have a system that certainly makes for efficiency. They keep the organization interested and the best men get along the best; the melting pot of the whole business—so far as finding whether a man can stand criticism—is the organization meeting. These sessions are held whenever there is a call for them.

#### Makes the Responsible Man Explain.

"Suppose that there has been some hitch in the work, some break in the routine which is essential to the good running of the establishment; a meeting is called, the presiding officer reads a statement of the case in question and the man who is responsible is asked to explain how it happened. Under these circumstances the man who is responsible has to give an account which is purely businesslike and free from the personal attitude that might be assumed were he called into the manager's office and given an opportunity to state his case in private.

"Furthermore, the man knows that the whole force is listening to what he says, so he makes pointed statements that he can back up with facts; the matter is adjusted then and there. If the man made a slip he can do nothing but admit it, and if it was some fault in his method of doing his work or running his department he comes out of the meeting with a knowledge and intention that should help him not to do it again.

#### Too Many Slips Means "the Gate."

"If he makes too many slips, there is but one way out for him—and that way is out. But if he stands up under the fire of criticism and takes it in the right spirit—which is that it is all for the good of the organization—he stands to go higher on the company ladder, in salary, if not immediately in position. The point Haskett makes is that the man who can't stand criticism isn't worth keeping and that the man who can stand it is the man who will profit by it and be better."

"Yes, you've diagnosed the trouble with the Kid," asserted the Advertising Manager, "and now if you'll ship him down to your salesrooms and give him a word of advice I'll consider the job completed."

"Oh, fine!" exclaimed Reilly.

"Well, what am I going to do with him?"

"Why don't you talk to him yourself?" asked the Sales Manager.

"I did get started one day, but he looked so sad and hurt that I didn't have the heart to say any more!"

## Reilly Suggests a Strenuous Method.

"Bawl him out! Bawl him out!" advised Reilly.

"What do you mean? Give him hell? Lay him out stiff?"

"Sure!" replied Reilly. "I'll bet he's just the kind of a kid that would wake up and get wise to himself if you did that. Sometimes people are that way; a gentle, expostulatory reprimand has no effect at all, but if you lay down the law with a vengeance it makes an impression. Anyway, if you hand him a redhot handful of criticism he will be less likely to get peeved over little criticisms, the contrast will be so great."

"I've been in a mood for it more than once."

"Don't do it when you're hot." advised Reilly. "You are likely to say things you don't mean. I should say you are in a much better condition to do it now than you were when you came in."

"No time like the present!" exclaimed the ad man as he got up and went out-but without flouncing.

## MOTOR WORLD

# LOUIS XVI SETTING FOR ANNUAL NEWARK DISPLAY

Elaborate Decorations Feature of New Jersey Dealers' Seventh Show—Crowd Gathers Early Despite Bad Weather.

Blizzards and near blizzards notwithstanding, the seventh annual show of the New Jersey Automobile Exhibition Co. opened its doors in the First Regiment at least, is not of the genuinely negative sort.

As a setting for the cars decorations savoring of one Louis XVI have been used, with the result that the Armory in its guise for the present show is far more ornate than for any of the six previous shows. The prevailing colors are gold and white, that is, if the eyes of the observer are cast overhead, for the entire ceiling of the huge drill hall is hidden behind alternate bands of goods of these colors. But underfoot a warmer color greets the eye, the floors of the

the center of each block of booths. The signs are done in gold letters on a white background, and are supported by means of scrollwork brackets from two rows of tall white pillars, ball capped, which divide the hall longitudinally. Well distributed electric lights serve to illuminate the signs, while festoons of incandescents strung from the concealed ceiling beams serve to add to the general brightness emitted by the smilax entwined chandeliers.

There are 38 dealers in motor vehicles showing the products of 37 pleasure car



GENERAL VIEW OF NEWARK AUTOMOBILE SHOW, AND ITS EYE-PLEASING DECORATIVE SCHEME

armory, in Newark, promptly at eight o'clock on last Saturday evening, February 21st; the exhibition will continue to be the "piece de resistance" of the Newark attractions throughout the present week until Saturday evening next, February 28th. And despite the proximity of the New Jersey city to Gotham, where automobile shows of a "higher order," in point of numbers at least, make interesting the first week in the new year, the throngs that lined the aisles of the present show on the opening night, and on each succeeding afternoon and evening since the doors swung wide, go far toward showing that New York's influence in Newark, on automobile show matters

booths being carpeted with material of maroon hue.

But by far the greatest eyepleaser of the whole setting is the electric fountain in the center of the floor. An octagonal pool, surrounded by a white marble balustrade forms the setting for a hewn stone fountain, whose waters reflect the changing rays from hidden multicolored incandescent lights. Potted plants just inside the balustrade add considerably to the effectiveness of the piece, while the appearance of the whole is enhanced by eight columns which rise from the eight angles of the octagonal railing, each bearing a statuette.

A continuous signway extends down

factories and close on to a dozen truck factories represented. The trucks are "bunched" on one side of the hall by themselves, and on the other side of the room. The choicest space in the center of the room is given over to the display of the pleasure cars. The complete list of exhibitors follows:

Vehicles: Service Motor Car Co.. Abbott-Detroit, Hupmobile; Hoagland-Thayer, Adams; Shepherd Auto Co., Apperson; J. W. Mason, Briscoe; Buick Motor Co., Buick; Detroit-Cadillac Motor Car Co., Cadillac; Paddock-Zusi Motor Car Co., Chalmers; Wallace Motor Car Co., Cole; R. & L. Co., Garford; H. J. Koehler Sporting Goods Co., Grant

and Koehler commercial; Haynes Auto Co., Haynes; J. J. Henry Mueller, Jr., Havers; A. Elliott Ranney Co., Hudson; Newton-Humphreville Co., Jeffery; Alexander Brunner, Kline; North Jersey Motor Vehicle Co., Krit; Rickey Machine Co., Marmon: Frank K. Crowley, Maxwell; Touraine Motors Co., Mitchell and Paige-Detroit; E. V. Van Atta & Co., Morton tractor; North Jersey Motor Vehicle Co., National; C. F. Briggs Co., Oakland; Oldsmobile Co. of New Jersey, Oldsmobile; C. Louis FitzGerald Motor Co., Overland and Peerless; Edwards Motor Car Co., Pathfinder; Ellis Motor Car Co., Pierce-Arrow; Van Deman & Wainwright, Pullman; Central Motor Car Co., Regal; Reo Motor Car Co., Reo; J. M. Quinby & Co., S. G. V. and Simplex; Maxfield Motor Truck Co., Selden; A. G. Spalding & Bros., Stevens-Duryea; Ingle-Hunt Motors Co., Stewart: Greene Motor Car Co. Studebaker; J. W. Mason, Velie; Walter Motor Truck Co., Walter; R. & L. Co., Willys-Knight and Willys Utility; Linkroum Automobile Co., Winton.

Accessories: Richards Quick Shine Polish Works, Irving G. Farmer, Ballantine-Gilland Co., Martin-Evans Co., Browne & Weber, Essex Storage Battery & Supply Co., Guaranteed Specialties Co., E. W. Hirsh, Self-Vulcanizing Rubber Works, Standard Oil Co., Van Deman & Wainwright, W. S. Sheppard, Chas. E. Ball Co., Hardman Tire Agency, Norben Oil & Supply Co., Naedele Bros., Puncture Cure Sales Co., Frank Eber, John R. Price, Auto Tire Exchange, The Metal Shelter Co., Chas. E. Miller, Rutherford Rubber Co., National Auto Supply Co. of New Jersey, Burnet & Chandler, National Oil & Supply Co., S. B. R. Specialty Co., Commercial Casualty Ins. Co., Y. M. C. A. Auto School, Weathersilk Sales Agency, Van Deman & Jansky, C. E. Burtis, Sargeant Mfg. Co., Economy Auto Supply Co., Newark Auto Top Co., Combination Rubber Mfg. Co., N. J. Tire Exchange, Peerless Motor Specialty Co., Divine Tire Co. and Eiker Carburetter

## January a Record Month for Fords.

Whether or no it is the effect of the \$5-per-day minimum wage is a pretty question, but the fact remains that, although January is not supposed to be a "peak" month in automobile production, the first month of 1914 proved to be the best in the history of the Ford Motor Co. During that month there were built and shipped 23.936 cars. The previous record was 22.049. made in June of last year.

## UNIFORM TRAFFIC LAW IS DRAFTED BY LAW DOCTORS

Commissioners of Eight States
Draw up 8,000-Word Standard
Measure — Minority Report
Favors 50-Word Act.

After a number of busy sessions stretching over the last three months, the Uniform Motor Vehicle Legislation Commission, which held its initial conference on November 21st, on Saturday last agreed upon a draft of a uniform law to control motor vehicle traffic which will be submitted to the Governors of the eight Eastern States whose representatives go to make up the commission and through them to the various legislatures. At the same time, it is altogether probable that New York representatives in the commission will offer a minority report suggesting an all-embracing law couched in less than 50 words which, if passed, would place all users of the public highways on the same basis.

The draft of the law which has been approved by the commission representing New York, New Jersey, Connecticut, Massachusetts, Pennsylvania, Maine, Maryland and Delaware is comparatively short and contains approximately but 8,000 words as against 14,000 for the existing Massachusetts laws; in brief, it would bring about uniformity in at least five respects—i. e., speed, examination of operators, power to refuse to grant a license, and, for cause, to revoke one already granted, control of nonresident motorists and imposition of penalties for violations.

It provides that vehicles shall be operated with due regard to public safety and to the width of the highway and the condition of traffic, and that speed in excess of 24 miles an hour shall be considered prima facie evidence of reckless driving should an accident occur. It does away with the distinction between "chauffeur" and "operator" in so far as license is concerned, and provides for an examination as to competence before license is granted to any driver. It gives the power to the Secretary of State or the Motor Vehicle Commissioner or Commission, as the case may be, to refuse license and to suspend or revoke it for intoxication or other cause, and thus opens the way also for the control of the non-resident motorist through complaint to the proper authorities in his home

Although not embodied in the draft; it was voted the sense of the body that

lights should be carried on all vehicles, whatever their motive power.

The minority report, which probably will be presented by Samuel W. Taylor, chairman of the Commission, Fay C. Parsons and A. J. Deer, president of the State Automobile Association, who form New York's representation, is as follows:

"Be it enacted, that operators of motor vehicles and all other users of the highways shall at all times use due diligence in such use of the highways and shall conform in every respect with the established customs or rules of the road under penalty duly provided."

In addition to the men whose names already have been given, the commission is made up of the following members appointed by the Governors of their respective States with the approval of the legislatures:

New Jersey: Job H. Lippincott, Motor Vehicle Commissioner; Col. Edwin A. Stevens, Highway Commissioner, and Geo. L. Burton. Connecticut: Albert Phillips, Secretary of State; Alfred H. Terry, and Charles J. Bennet, Highway Commissioner. Massachusetts: Col. Wm. D. Sohier, Chairman of the Highway Commission. Pennsylvania: E. M. Bigelow, Highway Commissioner, and Robt. P. Hooper, president of the Pennsylvania Motor Federation. Maryland: Dr. H. M. Rowe, president of the Automobile Club of Maryland; H. M. Luzius, its secretary, and Harry A. Roe, Highway Commissioner. Delaware: Judge Sylvester D. Townsend, Jr., and Charles S. Guyer. Maine: Scott Wilson, Attorney General; Lyman H. Nelson, and J. C. Seates.

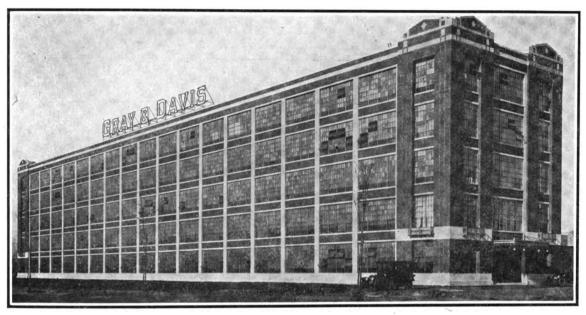
Lapse of Time Invalidates Fraud Claim.
When one person buys a business of

another and seeks later to have the sale set aside on the ground of fraud, the courts will consider the length of time between the discovery of the alleged fraud and the attempt to set the sale aside, according to a decision by Justice Greenbaum in the Supreme Court for New York County, in dismissing the case of Ingraham vs. Hughes.

If the purchaser continues in possession without protest for six months after the discovery, until business reversals lead to dispossess proceedings for non-payment of rent, the contract will not be set aside. The removal of chattels from the premises after the sale will also not be taken as a ground to set the sale aside, though if it is shown that the intention was to deliver them, a recovery may be had by the vendee in a civil action for damages for their conversion.

## MODERN FACTORY THAT IS MODEL OF ITS KIND

Recently Completed Gray & Davis Plant Which Was Designed and Equipped With View of Attaining Utmost Efficiency—Walls That are 70% Glass Provide Exceptional Lighting Facilities.



SUPERF FACTORY BUILDING RECENTLY COMPLETED FOR GRAY & DAVIS, INC., OF BOSTON, MASS.

Just how numerous are the ideas for manufacturing plant improvements that come seething through the brains of those whose business it is to erect and equip factories is something that no outsider can hope to know; the supply seems almost unlimited. It seems futile to doubt, however, that about all of them have been built into the plant recently completed for Gray & Davis, Inc., of Boston, Mass., and though the views shown in the accompanying illustrations tell an impressive story of modern completeness, they fall far short of telling the whole truth, as photographs commonly must. Not only is the factory said to be the largest of its kind that has been built, but it is credited with being the last word in industrial buildings.

The plant is located on a plot facing the Charles River, and the 150-foot space between the building and the river forms an ornamental lawn. At the back of the factory is a spur of the Boston & Albany Railroad. Though the main building is 381 feet 6 inches long and 81 feet wide, there is room on the land for two more similar buildings. At the back of the main building there is an ell 36 x 62 feet; both main building and ell are five stories in height and there is a total floor

area of 140,000 square feet, or nearly 3 acres.

## Walls that Are Nearly All Glass.

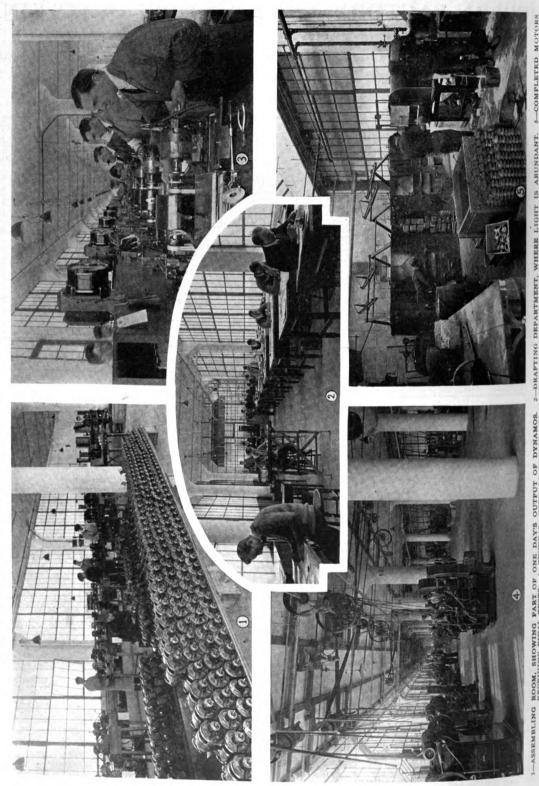
The building is of reinforced concrete with an ornamental facing of tapestry brick. It may be said, however, that the enormous area of glass (70 per cent. of the total wall area) leaves comparatively little room for such decoration. The substructure is also of concrete. There is no basement; the main floor is laid directly on the "fill" without the use of forms. Piers for the support of the columns are cylindrical, with mushroom tops, and of reinforced concrete; the piers on which the columns rest are of plain concrete, as they rest on the rock and have only compression stresses to resist.

The steel sash used in such profusion is so arranged that 33 per cent. of the window area is adjustable for ventilation. It figures out that the ventilation area is equal to 23 per cent. of the total wall area, and with such ample opening for the passage of air no forced ventilating system is required, and none is used. All piping, electrical conduit and so on is run through floors; pipes are run through heavy wrought-iron sleeves, and

the construction is such that leakage cannot get through from one floor to another.

The enormous window area necessitates a correspondingly large area of heating surface for cold weather, and as adequate coils of spipe would be unwieldly and would occupy considerable space, the automatic fire sprinkler system has been pressed into the heating service; the Gray & Davis building is said to be one of only three buildings in this country in which such an arrangement has been carried out. Hot water is circulated through the sprinkler pipes to augment the effect of regular heating coils; and in order to prevent the fusing of the plugs designed to melt in case of fire, the heads containing the plugs are placed on offsets in which there is no circulation of water and which, therefore, are sufficiently cool to prevent the melting of the soft metal. Not only is the heating facilitated by this method, but there is a constant circulation of water which prevents the clogging of the pipes.

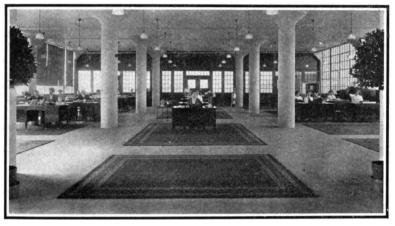
It is no more than appropriate that the offices in the building should be handsomely fitted up, and that this is the case is shown in the accompanying illus-



GLIMPSES OF SOME OF THE DEPARTMENTS OF GRAY & DAVIS'S SUPERB FACTORY

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trations. The partitions are of solid mahogany and glass, reaching to a height of 8 feet. The steel sash is double hung. The furniture used was especially manufactured for the purpose and blends with its surroundings most harmoniously. Large open fireplaces are conspicuous features of Mr. Gray's office and of the directors' room, which immediatealy adjoins it, and the red tile floors partly to tap the current at the point most convenient. As might be expected, the work of testing finished machines is an important part of the factory routine, and the testing equipment is extensive and complete. For testing dynamos, fixtures are provided into which the machines are clamped, while a shaft at the back of the bench supplies power which is transmitted to the dynamos under test



GENERAL VIEW OF MAIN OFFICES ON SECOND FLOOR

covered with rugs add not a little to the attractiveness of the offices. The "grand staircase" from the lobby on the first floor leads to a point near the center of the group of offices. The general and private offices occupy the entire width of the building.

### Providing for Employes' Comfort.

The 600 employes constituting the factory force which turns out 320 complete electric lighting and starting systems each day, are well looked after in every way. The ventilation and lighting already has been referred to. Ample and convenient locker rooms are fitted up. and there are large washrooms with hot and cold water. For the use of the women employes there is a comfortable rest room, and a restaurant provides meals for those who desire to make use of it. For the care of employes in case of accident or illness there is a physician constantly in attendance at the factory, and a room is maintained at the Boston Hospital, with nurses and everything necessary for the proper care of employes in need of medical attention.

Throughout the factory power for driving the many machines is supplied by ceiling electric motors and transmitted through countershafts and belting. For the hanging of ceiling apparatus supports have been provided every four feet, and electric outlets at frequent intervals make it an easy matter

by belts. The usual meters and other measuring instruments are provided for indicating the output of the generators. Motors are provided with current and run under conditions that indicate their speed, power and efficiency.

story section with the same window space as in the main building, the end is accomplished by making almost the entire roof of big ventilating skylight sections.

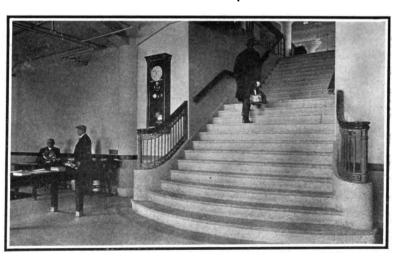
What with its present excellence and its ample provision for the future needs of the company, the new Gray & Davis factory is one that may well stand as a model of its kind and as an indication of the progressive spirit that moves the concern.

#### Proper Way to Turn on Narrow Streets.

Even in such matters as turning a long wheelbase car on a narrow street there is a right way and a wrong way to go about it, though not many persons know the right way, or at least the way that takes the shortest time and causes the least wear and tear on the car. The general practice of first going ahead in a curve until the front wheels bring up against the curb requires that the low speed be engaged, then the reverse speed. to back up in a reverse curve, and then the low speed for going ahead again. But if the car is first backed in a curve to the far curb, it will be necessary to engage the low gear only once.

### Stop that Prepares for a Start.

An old suggestion that can very well stand repeating when the weather is cold is to stop the motor with the cylinders full of gas by opening the throttle when



LOBBY AND STAIRCASE TO OFFICES ON SECOND FLOOR

At the rear of the big building there is a one-story section which houses the receiving department and also the garage and service department, where cars are taken care of and where the kind of service incident to the use of Gray & Davis lighting and starting equipment is given. As it is not possible to provide the onethe ignition is shut off. If there is an auxiliary air valve or other means of controlling the mixture from the seat, the charges taken in should be made as rich as possible. This provides what amounts to priming, so that if the motor is not left standing too long it will start easily.



## \$500,000 BUSINESS IN ONE YEAR BY BAND OF THIEVES

New York Police Unearth Country-Wide Syndicate for Stealing and Selling Cars-Branches in Four Other Cities.

Through the confession of Charles Rudy, a chauffeur, the New York City police have secured a good start on the trail of a country-wide syndicate of automobile thieves who have been stealing and selling cars to the extent of a half million dollars a year; Rudy's confession implicates several insurance adjusters who are said to have conducted negotiations with the thieves for the return of the stolen cars, but Judge Swann, of the Court of General Sessions of New York City, states that the adjusters quite likely can come within the protection of the law in their acts.

According to Rudy, the syndicate maintained headquarters in New York and branches in Chicago, Philadelphia, Boston and New Orleans, cars stolen in one city being shipped to another city to be sold, thus rendering detection less likely than if the sales were made in the city where the theft was committed. Rudy declared that he was the director of the work and had made thousands of dollars in the past year.

His story led to the arrest of Fredereick F. Goodman, who operates a used car establishment in New York City on Columbus Circle, and Felix Leopold, ot 560 West 163rd street; both are charged with criminally receiving stolen property. Many of the cars stolen in New York are said by the police to have been traced to Goodman. Other arrests are to be made.

Figures given the court are to the effect that 258 cars valued at about \$500,-000 were stolen by the gang during 1913; of these 188 were sold to the insurance companies and 90 per cent, of the remainder were shipped to other cities in exchange for cars stolen in those towns. Rudy said the insurance companies generally were willing to pay from \$200 to \$400 for a car and return it to the owner rather than pay the owner from \$1,000 to \$5,000 insurance. In these cases the adjusters conducted the negotiations, and if the insurance company would not pay enough the car was shipped away and sold out of town. All uninsured cars were shipped and sold.

Rudy explained that he had four men working for him and that he told them

what cars to steal and where to secrete them temporarily; they were held for a time in various garages in Manhattan and the Bronx, and Rudy makes the statement that there is hardly a garage in the Bronx which has not at some time held one of his stolen cars.

#### BLAME IT ON THE TIRE.

He didn't pump it full enough—though all the air is free; He left it soft and spongy like, and scooted on with glee. He skidded and he gridded and whooped through dust and mire

through dust and mire.

And when it burst He cursed and cursed-And blamed it on the tire.

He drove it on the street car tracks with confidence superb: scraped it on the lamp posts and he scraped it on the curb; He slammed it and he jammed it any way he might desire;

And when it popped Right out he hopped—
And blamed it on the tire.

He cut it on some broken glass, but said that didn't hurt;

He kept right on through sand and mud and filled the cut with dirt It spotted here and rotted there, and

soon he howled with ire; When up it blew He blew up, too— And blamed it on the tire.

He put on chains that ground and chewed and gouged into the tread, knew his wheels were out of line, "But what of that?" he said.

He whizzed along and sizzed along, he picked up nails and wire,

And when it banged His fist he whanged— And blamed it on the tire.

Who is this man? Go ask the boys who meet him every day. ask the boys who have to hear the

things he has to say. He bores in and he roars in with words

of angry fire,
Though he's to blame,
It's all the same— He blames it on the tire.-Ex.

## Baste First Master of Chauffeurs' Lodge. George Baste was chosen as master at the first election of officers of the newly formed National Chauffenrs' Association of Detroit. The other officers are: Western Chauffeur, Henry L. Beggs; Eastern Chauffeur, Charles R. Bennett; marshal, William T. Smith;

secretary, Robert Moore; treasurer, Wm. Andrews. The body, which is described as a lodge, has as its object the betterment of chauffeurs' working conditions.

## Fifty-two Horses Give Way to Trucks.

The Los Angeles Brewing Co. is disposing of 52 horses and 15 wagons, which have been replaced by motor trucks; the company bought its first truck three years ago and now has a fleet of nine Whites.

## IRRIGATING PROSPECTS IN FORMER DESERT ON COAST

Southern California Dealer Gets 25 Per Cent. of Population to His "Opening"-Sales Despite Nature's Handicap.

That the small town dealer is not barred from using the merchandising ideas which are so frequently used by his big-town brother was well demonstrated recently by the Imperial Valley Transportation Co., of Imperial, Cal., which proved that regardless of the size of the town, prospects and people are much the same kind of human being. And the Imperial Valley, it may be stated, not long ago was a desert; but it is fast being reclaimed by systematic irrigation.

The Imperial Valley Transportation Co., which began selling Overland cars in Imperial county in 1911, recently opened a new salesroom and service station and far surpassed the sales scheming of the dealers of larger cities in that it got about one-third of the population of the section to attend the opening, which was the cause of some justifiable pride.

When the building was completed, advertising was inserted in the newspapers and engraved invitations were sent to 750 names of a selected list and arrangements were made for a cordial reception of the visitors; the salesrooms were decorated, chairs and settees were provided and courteous employes conducted the visitors through the building, not omitting, of course, to mention casually that the new building meant a bigger and better service to Overland automobile owners residing in the Imperial Valley

Out of a population of about 3,500 nearly 1,000 visitors responded to the company's invitations, and it is estimated that the reception will prove of great value in the coming year's business.

When the company, of which H. D. Paulin is manager and R. L. Blackman secretary, began to sell cars in 1911-12. it contracted for 10 and sold 18; last year it contracted for 20 and sold 36. and this year has already disposed of 30 on a 60-car contract; the dealers expect to sell nearly 100. All of this has been accomplished in the face of poor roads, sandy country and the fact that building up the valley has been uphill work from an automobile salesman's point of view.

## DEVICES THAT PREVENT NUTS FROM TURNING

# Lock Nuts Contrasted With Nut Locks In a Manner to Make Plain the Operation of Both—How Spring Washers in Their Various Forms Obviate Looseness—Safety in Bolted Construction.

"Tony," said Ward to the lathe hand, as he squirted a shot of "gas" onto a wad of waste and proceeded to scour sundry spots of oil off his fingers, "what's a nut lock?"

"Thing that keeps your car from falling apart," laconically replied the lathe hand, with one eye cocked on the spiral of smoking metal that curled away from the lathe tool and lost itself in the scrap pan.

"You can't rightfully say there would not be any automobiles if there were no nut locks," he added thoughtfully, "because 'tain't true. Probably there would be just as many cars, but they'd reach the junk pile a good deal sooner. Not many persons know what a nut lock is or what it's for or how it works. But the nut lock has a whole lot of mighty interesting dope behind it. Other things have, too; most everything about an automobile has an interesting history if only a person is interested enough to dig it out, or to study it out."

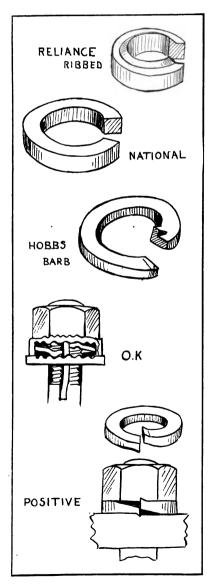
## Necessity for Trade Knowledge.

Ward sat himself down on an upturned packing case and waited for Tony to-reset the lathe tool for another long cut. Above the hum of the back gears, Tony continued.

"I remember the time I first saw a spring washer; I was a kid then, cleaning out scrap boxes. I supposed it was an ordinary washer that had split and I spent a hard ten minutes trying to straighten it out on an anvil; every time I hit it a crack it shot out under the bench. After I had fished it out half a dozen times the shop foreman asked me with a tinge of sorrow in his voice whether I hadn't better 'get busy doing something useful.' Then he gave me a lecture on everything in general and on the supreme idiocy of attempting to flatten a highly tempered spring washer in particular. I'll never forget it; it made me think."

Ward watched Tony start the tool holder back the other way for another long cut.

"Nut locks and lock nuts amount to about the same thing in the end," went on the lathe hand, after he had lighted a stubby pipe and waited for the lathe tool to bite it way through the tough steel. "They keep your car from falling apart. Bolted up construction will remain secure and tight only when there is no relative movement between the pieces bolted together and when there is no vibration. But even gentle vibration or the most imperceptible movement be-



VARIATIONS IN SPRING WASHERS

tween the pieces will make even the biggest nut loosen up in time.

"Ain't it funny the average garageman or dealer doesn't know these things? They sell nut locks-spring washers and so forth-because there is a demand for them; but nine out of ten don't know what they are used for. Yet you would naturally think they'd find it necessary to know. Seems to me that if I was a car owner. I'd like to know why it's a good thing to use nut locks and how they work, and I'd be willing to bet that if some enterprising dealer or garage owner arranged some sort of a demonstration, or even made it a point to explain away some of the mysteries of such things, he'd not only increase his revenue but he'd make friends as well. It's a short world and you can't have too many friends.

## How Spring Washers Operate.

"But how many garagemen or dealers do you suppose there are who could explain the difference between the action of a spring washer nut lock and one that merely prevents the nut from turning? Not many, I'll warrant. Yet the whole theory is so simple any normal schoolboy can understand it. The trouble is, those who ought to be interested don't take the trouble to be interested.

"Look-the difference between the action of a spring washer nut lock and a nut lock that is designed merely to prevent a nut from turning-imagine the ordinary castellated nut, for instance, with a number of teeth sawed in the top and a cotter pin through the teeth and a whole in the bolt-is that the spring washer is designed to compensate for the such slight looseness that is bound to occur in the end if there is vibration and thus to maintain the friction between the nut and bolt threads and the nut and the surface it bears on; in this way it keeps the nut tight, for after all it is only the friction that keeps the nut on. The other kind of a nut lock merely keeps the nut from falling off, regardless of the amount of looseness that may occur. There is another kind, too, that prevents the nut from turning as well as acting as spring compensation for what



has come to be styled 'bolt stretch,' but which is really wear caused by looseness or corrosion."

Ward stretched out his legs as Tony reset the lathe tool and adjusted it for the final rough cut.

"Do you get what I'm driving at?" the lathe hand wanted to know. "Here's a perfectly plain spring washer that the Reliance Mfg. Co., of Massillon, O., puts out; they are made by the Hobbs Mfg. Co., of Worcester, Mass., and the National Lock Washer Co., of Chicago, Ill., and a lot of other people, too. Nice look-

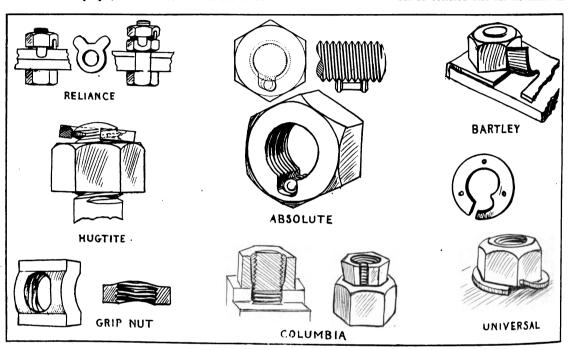
Some test? According to the S. A. E. standards, lock washers must be parallel faced sections with outside diameters coinciding practically with the long diameters of standard S. A. E. nuts; the inside diameter must be from 1/64 to 1/32 of an inch larger than the bolt diameter."

#### Making Plain Spring Washer Action.

"Now, look here," Tony went on, reaching for a bolt and a wrench, "and 1'll show you how one of these spring washers works.

tinued: "Here! Take a look at this extract from a paper read before the Central Electric Railway Association last November," digging a grimy sheet out of his tool drawer.

"What does it say? It says: The possibility of looseness without nut movement was raised some years ago by the superintendent of a private car line, and as a test he arranged that one of their cars, which had come back from its initial trip, should have all nuts thoroughly retightened, and a certain number so cottered that nut movement was



DIVERSITY OF CONSTRUCTION SHOWN IN LOCK-NUTS AND NUT-LOCKS

ing little piece of work, isn't it? Best spring steel, carefully tempered and made to a standard size. But you should have seen the number of different sizes there were a few years ago. Why one company alone made no fewer than 300 different sections for bolts from 3/16 to \$\frac{1}{2}\$ of an inch in diameter. But it's different now, since the Society of Automobile Engineers took a hand in matters.

"The S. A. E. lock washer specifications, by the way, are interesting, for they let in light on the abuse a washer will stand. They state that with 45 per cent. of the washer, including one end, gripped in a vise, and 45 per cent., including the other end, between the parallel jaws of a wrench, movement of the wrench at right angles to the helical curve shall twist the washer through 45 degrees without sign of fracture and shall twist it in two within 135 degrees.

"You see how the washer is squeezed flat, when I pull the nut down tight," suiting the action to the words. "Now, under ordinary circumstances, if that nut became loosened through vibration, without a spring washer under it, it would stay loose and in time it would probably drop off. But what happens when the spring washer is in place? Why, as soon as even the slightest looseness occurs, the spring in the washer takes it up-maintains the original friction between the threads of the nut and the bolt and consequently the nut remains to all intents and purposes as tight as it was in the first place. In other words, the spring washer keeps the nut tight in spite of looseness.

"Can looseness occur without nut movement?" Tony repeated the question.

"Sure it can," he answered, and con-

an absolute impossibility. Eight column bolts and four hanger iron bolts were removed and carefully micrometered, replaced and tightened firmly to position, after which nuts and bolts were drilled and cottered. In 90 days the car was back in the yards, and an examination showed that each of the cottered bolts was loose, and inspection determined frictional wear under both heads and nuts.'

"That's pretty nearly answer enough, isn't it?" Tony asked, as he prepared for the first finishing cut. "I was a little bit wrong in saying there can be no such thing as bolt stretch, but it's the looseness that causes the stretch, not the stretch that causes the looseness. Consider: If all the parts are in firm contact and the combined elastic limit of the bolts is far greater than the possible strain, how can there be bolt stretch?

But—if there is even a little bit of looseness, sudden strains are not resisted by the structure as a unit—all this from that same paper—but by each bolt separately. Hence, the bolts are strained beyond the safe load.

"Wouldn't corrosion cause looseness? No, you've got the cart before the horse again. If all the parts are in firm contact, how are you going to have corrosion? It's always the looseness that comes first, then the corrosion or the bolt stretch or the wear. Get that fixed in your mind. Now do you begin to see where the spring washer fits in?

#### Effectiveness of Spring Washers.

"Remember the test the Hunt company of Chicago pulled off? I guess you do, for it was pretty widely advertised. Well, spring lock washers and castellated nuts were subjected to vibration under exactly similar conditions, and what was the result? Why, the spring washers retained their effectiveness for an average of 87,200 vibrations, but the nuts lost their effectiveness between 50 .-000 and 87,000 vibrations. Another thing, spring washers are cheap; they represent an economy of one or two cents a nut as compared with castellated nuts; that's one reason we use them in place of other things.

"Generally, we use the plain spring lock washer, but there are other kinds that are designed to prevent nut movement as well as to compensate for slight looseness. There is the 'positive' spring lock washer, for instance. It's made by all those companies, in addition to the Positive Lock Washer Co., of Newark, N. J. It differs from the plain spring washer only in that the ends are turned up very slightly and are sharpened so that when the nut is screwed down tight one point digs into the nut and the other digs into the metal the washer seats on. So you see, they provide a sort of double lock. And no spring lock washer ever harmed a nut or a bolt thread; that's worth writing down and remembering.

## Other Types of Lock Washers.

"Also there is the ribbed pattern of spring lock washer which is designed to do the same thing in a different way. The washer is put in place with the rib uppermost. Consequently, when the nut is screwed down, the rib—and all the rest of the washer, as well—being made of hardened and tempered stock, and therefore harder than the ordinary nut, forces a small part of the metal off the nut into the threads and in this way locks the nut securely. The Hobbs company, by the way, produces a washer of the positive

type in which only about half of the end is formed into a barb.

"Those are the three types of spring lock washers that are most used-plain, barbed and ribbed," Tony went on, "though some makers have introduced slight variations. Take the locking arrangement produced by the O. K. Nut Lock Co., of Providence, R. I., for instance. In this case there is a spring washer with the ends formed to fit into little depressions formed in the nut and in a supplementary washer which is keyed to the bolt; the bolt is slotted. Hence, the spring in the washer takes up for wear or slight elongation of bolts and the corrugations in the bolt head and the supplementary washer prevent the nut turning in the event that it should become very loose."

Tony adjusted his lathe tool for the final finishing cut before he went on.

"If you will take the trouble to glance at page 885 of the 19th edition of Trautwine, which is in the drawer under the bench, you will find explained one very good reason why nut locks are needed. As nearly as I remember it, the book says that 'it has been claimed that if the threads of an ordinary bolt and nut are carefully cut so as to be in contact with each other throughout, no lock nut contrivance is necessary because the friction between the two threads is distributed over a large surface and wear does not take place so readily as if the threads touched each other at only a few points.' But you can't make commercial nuts and bolts that are theoretically perfect, for what of the wear in the cutting machinery?

## Lock Nut With Separate Shell.

"It is this very fact that has been responsible for the development of the particular lock nut produced by the Columbia Nut & Bolt Co., of Bridgeport, Conn. The Columbia company holds the view that no commercial nut is a perfect fit upon the threads of its bolt and so it proceeded to produce a nut that does fit every bit of every thread. The nut is virtually a double one. The nut proper is split and tapered on the outside and fits into an outer shell which is tapered inside. Consequently, when the nut is screwed home, the inside part sliding on the shell, draws the threaded part together and literally forces the threads of the nut into perfect contact with the threads of the bolt. It's simple to get the nut off, too, and it does not harm the

"This Columbia device is a lock nut pure and simple, of course, and it is not the only one of its kind. As a matter of cold fact, the number of lock nuts that has been patented in years gone by is nothing short of astounding. Some of them have proven worthy the time and energy put into their invention, but most of them have passed quickly out of existence almost as soon as they were put on paper. The railroads have been chiefly instrumental in stimulating the demand for nut locking devices, for there are so very many bolts and nuts used in railroad construction which must be kept tight, or at least so fixed that they cannot come off.

## Nut That Has a Rolling Wedge.

"Take the Absolute, for instance, which is produced by the American Lock Nut Co., of Chicago, Ill. Here is a nut which has come into use by some railroads and is equally applicable to automobile construction, though I don't know any one who is using them.

"The principle of the Absolute is that of a rolling wedge. The device is a recess cut in the inner surface of the nut in which there travels a locking pin of such size that when the nut is screwed onto the bolt, the angled sides of the locking pin heads fit into the threads of the bolt; the flat surfaces of the locking pin travel just against the angled top of the recess of the nut, rotating in its deepest portion. The top of the recess is of such angle that the nut is automatically and continuously locked against any backward motion which merely serves to wedge the pin more tightly into position. To take the nut off, it is merely necessary to insert a small brad into the recess to prevent the pin from rolling up into the smaller part of the recess. Hence, it is comparatively easy to put the nut on or or take it off and it can't hurt the threads.

#### Devices That Grip the Threads.

"The Grip Nut, which is made by the company of that name, of Chicago and New York, is another that has come into quite extensive use on railroads. It is nothing more than a supplementary nut of a peculiar form which is put on over the regular nut. Grip nuts are blanked out of a bar of steel having an arch running through its center; the nut is threaded through this arch, after which it is deflected by pressure so as to produce, when put in place, a locking friction upon the threads. They don't require to be jammed or sprung. Just as soon as all the threads of the Grip Nut have 'caught' she's locked and nothing will get it off but a wrench.

"There's another device of a somewhat similar character which is styled 'Hugtite' and comes from the plant of the United Nut Lock Co., of Springfield, Mass. It looks something like a miniature, very thin nut, but it's not one. Instead of threads there are two 'tongues' extending from either side toward the center, engaging the bolt threads on either side. These tongues are so made that when the Hugtite is in place its faces are not parallel to the face of the nut; one edge touches the nut, but the other does not. Hence, as of two nuts on a bolt, the heavier will tend to travel the faster under vibration, the big nut would tend to ride up against the Hugtitle and the harder it presses against the lock the greater the friction produced between the little tongues and the bolt threads. Consequently, the Hugtite acts as an effective lock. No, it won't hurt the threads."

#### Preventing Nuts from Turning.

"Devices intended merely to prevent nut movement," he went on, "are almost as numerous as other kinds of nut locking devices and though they do not compensate for slight wear, or bolt stretch. they nevertheless perform a valuable service, for no matter how loose the nut may get it can never come off as long as the lock remains intact.

"The American Nut & Bolt Fastener Co., of Pittsburgh, Pa., long has been producing the Bartley lock for use on railroads, though just recently it has redesigned the lock to conform to S. A. E. standards. In its simplest aspect, the lock is nothing more than a little plate which slips on like an ordinary washer. When the nut has been drawn up tight, there is a little tab which is turned up to prevent the nut from turning. Simple, isn't it? Take 'em off again? Sure you can. Only have to bend the tab down with a hammer.

"The Universal Lock Washer Co. of New York City, produces a lock washer that looks a good deal like a spring washer, though it is not one. The washer has a little tab that the nut rides over as it is screwed into place, and when the nut is tight the tab sticks up and prevents the nut from turning back. When the nut is once set the washer lies flat and no part of it is under tension. It's made of hardened steel and tiny little projections on its under side prevent it from turning. Two styles are made, one for wood working, in which there are sharp projections to bite into the wood, and one for metal working.

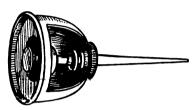
"Still another type of locking device that possesses the virtue of simplicity is produced by the Reliance Mfg. Co., of Massillon, O., which also produces all sorts of spring washers. The particular one to which I refer is styled the 'Clover Leaf Pattern' and is nothing more than a plain washer with a couple of little tabs which are turned down after the nut has been set up."

"Well," said Ward, as Tony commenced to slip off his jumper, "who'd 've thunk it? Here I've been sitting here for more than an hour listening to you spiel about nut locks and I never knew there were enough of the darned things to keep any man busy talking for more than three minutes."

And he disappeared through the garage door.

#### Making Oil Squirting Positive.

While a good squirt-can with the nozzle clear works all right, in that it will project a "shot" of oil when the flexible



WILL POSITIVE OILER

bottom is pressed, it has its disadvantages. For instance, if the nozzle is not clear and is poked into an oil-hole, the operator cannot tell whether the oil is 'squirting" or not because the bottom will yield anyway. Further, the quantity of oil always is the same at each squirt, which often leads to a waste of oil and to over-lubrication.

In the oil-can shown in the accompanying illustration, which is made by the Will Mfg. Co., of 1742 Monadnock Block, Chicago, these defects would appear to be overcome, for when the button on the bottom of the can is pressed the oil is forced out of the spout under pressure, and if there happens to be an obstruction, so much the worse for the obstruction-it is simply pushed out, unless it is something that cannot be dislodged that way, when the resistance of the plunger will show that there is something in the spout. The construction is by no means complex. Just below the lower end of the spout there is a tiny cylinder, while connected with the button by means of a stem is a leatherpacked plunger. When the button is in its normal position, where it is held by a spring, the plunger is well out of the cylinder, so that when the can is tipped the oil will flow into the spout. Pressing the button causes the plunger to enter the cylinder and force the oil, pump-

fashion, through the spout. The whole device is made to stand rough handling.

### Garage in Erie is a Barn-Not a Garage. When is a garage not a garage? No

matter whether anyone else agrees with it, the City Board of Appeals of Erie, Pa., has answered, "When it is a barn!" Two contractors had secured a permit to build an addition to what everyone supposed was a garage, operated on 12th street by Stirling Bros. Anyway, the contractors said it was a garage when they secured the permit, but before they had time to get fairly started with the work Building Inspector Dundon revoked the permit on the grounds that the clauses in the building code covering this type of building were conflict-

Faced by this situation, the contractors bestirred themselves and went to the City Board of Appeals, of which the members are the mayor, city engineer and city counsel. These dignitaries decided that while the contractors might go ahead the garage was not a garage but a barn. It might be a garage somewhere else but in Erie it's a barn.

## Maryland Father of "Safety First."

The Safety First movement having taken hold in many cities and several of them apparently honestly believing they had a part in the origination of the plan, the Automobile Club of Maryland rises to state that it, at least, formulated the Children's Safety Catechism which is being widely used. H. M. Luzius, of Baltimore, secretary of the club, states that the questions and answers for the guidance of children printed in Motor World of January 15 were gotten up by the Maryland club and were approved by the Board of Education of Baltimore.

January 2, Luzius says, 100,000 cards bearing these questions and answers were distributed in the schools of that city and 2,500 large hangers were posted in the schools, the teachers being directed to school the children.

## Bland Heads Illinois Garagemen.

Robert Bland of Evanston was chosen to head the Garage Owners' Association of Illinois at the first annual convention of that body, which was held in Chicago recently. The other officers chosen are: Vice-presidents, A. C. Hood, Sparta; A. C. Berthold, Aurora, and D. Estaque. Jacksonville; directors, G. P. Keith. Hinsdale; John McNeil and W. Ingram. Rutland; treasurer, Charles L. Turner, and secretary. E. J. McQuirk, Chicago. The next meeting will be at Blooming ton, April 22.

# CARS AND TRUCKS TOO IN SECOND CINCINNATI SHOW

Music Hall Exhibition Draws as Well as Predecessor Staged by "Independents"—Exhibitors and Their Wares.

Cincinnati's second show of the yearthe first was promoted by the Automobile Trade Association, otherwise known as the "independents," and occupied the Union Central Life Insurance Building between February 7th and 14th-was opened on Saturday morning last, 21st inst., in the Music Hall; and that its predecessor did not dampen show enthusiasm even a little bit is made plain by the fact that almost immediately after the doors were opened the aisles were thronged. Since the opening, the Automobile Dealers' Association, which has the show under its wing, has been playing to full houses at every session; the show will be brought to a close on Wednesday night, March 4th.

The North wing of the Music Hall, which houses the show, has been elaborately decorated for the occasion in three shades of buff set off by maroon portiers which serve to exclude the "gay beams of lightsome day, which gild but to flout" the exhibits. All told, there are upward of 40 exhibitors, of whom 27 show 36 brands of cars, pleasure—both gasolene and electric—and commercial. The complete list of vehicle exhibitors is as follows:

Vehicles: Chas. Behlen Sons Co., Detroit electrics: Cincinnati Automobile Co., Pope-Hartford and Stutz; Cincinnati Motor Truck Co., Universal commercials; Citizen's Motor Car Co., Packard pleasure and commercial and Baker electrics; Fischer Auto & Service Co., Chalmers, Locomobile and Saxon; Ford Motor Co., Ford; Franklin Motor Car Co., Franklin; Hanauer Automobile Co., Pierce-Arrow; Heilman Motor Car Co., Haynes pleasure and Commerce trucks; Herschede Motor Car Co., Rauch & Lang electrics; Imperial Motor Car Co., Stearns-Knight; Kentucky Motor Car Co., Oakland.

Kruse Motor Car Co., Maxwell pleasure and Kelly commercials; Leyman-Buick Co., Buick; Geo. C. Miller Sons Co., Cole and Standard electrics; Chas. Schiear Motor Car Co., Apperson and Hupmobile; Stevens-Duryea Co., Stevens-Duryea; Towle-Cadillac Co., Cadillac; Welbon Motor Car Co., Hudson; Herold Motor Co., Reo and Chevrolet; Motor Sales & Service Co., Autocar

commercials; Rayfield Motor Co., Rayfield cyclecars; Bowling Green Motor Car Co., Bowling Green commercials; White Motor Car Co., White pleasure and commercials; Progressive Garage, Pathfinder; Rosehall Garage, Ohio electrics; William Sommer-Kamp, Chase commercials.

#### Sioux Falls Dealers' Exhibit.

The Auditorium in Sioux Falls, S. D., was crowded last week—probably it was more crowded than has been the case for some time past, for during the week the Sioux Falls Automobile Dealers' Association staged its annual show, the opening formalities occurring on the 17th inst.; the show was closed on the 20th. Among those who exhibited were the following:

H. M. Hessenius, Studebaker and Maxwell; Reo Motor Car Co., Reo; Van Brunt-Bleeg Co., Overland; Central Machine Works, Empire; Adams Auto Co.. Cartercar; Siebrands & Folkens, Oakland; Frederick E. Murphy Co., Lozier, Mitchell, Paige, and Commerce commercials; W. L. Huffman Automobile Co., Chandler; C. O. Armstrong,, Haynes; Minnesota Motor Car Co., Chevrolet; Power City Auto Co., Chalmers.

#### Storms Postpone Albany Dealers' Show.

Although the decorations for the Albany (N. Y.) Dealers' Association's show, which was to have been opened in the State Armory on Wednesday, 18th inst., were practically complete and an advertising campaign was about to be started, contained stormy weather made it impossible to get the exhibits in place, making postponement necessary. The show is to be opened March 4th and will continue until the 11th.

## Elgin May Have Rival Automobile Show

Unless differences between Otis M. Hoyt and the members of the Elgin (Ill.) Automobile Dealers' Association are adjusted by March 4, 5, 6 and 7, there may be two automobile shows in Elgin on those dates; Hoyt has declared he will stage one in the Coliseum and the dealers say they will hold an exhibition of their own at the same time. They, however, have not chosen a manager or a location.

## Garage Roof Crushed by Heavy Snow.

Twenty cars were buried in the wreckage last week when the roof of the Elizabeth (N. J.) Automobile Co.'s garage collapsed under the weight of a heavy fall of snow; some of the cars were removed and all of the employes escaped, the cracking of the roof giving warning.

# OMAHA'S "NINTH ANNUAL" PROVES WELL POPULATED

Forty-Four Dealers Exhibit Half-Hundred Brands of Cars and Nine of Trucks—Accessories Also Displayed.

With the exhibits of 44 dealers set out, and just about filling, the Auditorium, the Omaha (Neb.) Automobile Show Association's ninth annual show was opened in that organization's home city on Monday evening, 23rd inst., and will draw formally to a close on Saturday, 28th inst. The show is by far the biggest that has been staged in Omaha and includes no fewer than 49 brands of pleasure cars and nine of commercials, to say nothing of a generous number of accessories and motorcycles. The complete list of vehicle exhibitors is as follows:

Apperson Auto Co., Auburn Auto Co., Bradley, Merriam & Smith, Bullock Machine & Supply Co., Cadillac Co. of Omaha, Cartercar Nebraska Co., John Deere Plow Co., Doty & Hathaway, Drummond Motor Co., Electric Garage, Empire Auto Co. of Omaha, Ford Motor Co., Freeland Auto Co., R. N. Howes & Co., W. L. Huffman Auto Co., Lininger Implement Co., Marion Automobile Co.

Maxwell Motor Sales Corp., Mitchell Motor Co., Motor Car Sales Co., Moline Auto Co., Andrew Murphy & Son, Nebraska Buick Auto Co., T. G. Northwall Co., Opper-Van Vleet Auto Co., Orr Motor Sales Co., Paige Co. of Nebraska, H. Pelton, Pfeiffer Carriage Works, T. H. Pollock, Rambler Motor Co., Guy L. Smith.

Stewart-Toozer Motor Co., Traynor Automobile Co., Van Brunt Auto Co., E. R. Wilson Auto Co., Avery Co., International Harvester Co., Nebraska Cycle Co., W. E. Dewey, Victor Roos, Omaha Bicycle Co.

#### Danger Signals by Ear and Eye.

It has been pointed out that the noise made by street traffic has had the effect of training pedestrians to depend upon their ears, rather than their eyes, for warning of danger when crossing streets. The number of vehicles that make practically no noise has grown faster than the public has been able, or willing, to learn to use its eyes instead of its ears, and this constitutes a danger that is probably better known to drivers of automobiles than to any other class of persons

## THREE-YEAR OLD CUSTOM REVIVED IN INDIANAPOLIS

Annual Show Converted into "Open House" Affair with Individually Decorated Salesrooms—"Old-Timers" Parade.

Having three years ago tried the "open house for a week" show idea, and followed it two years ago with a tented show in the streets surrounding University Park, and a year ago with a show in the Coliseum and Annex in the State Fair Grounds, the Indianapolis (Ind.) Automobile Trade Association has gone back to the plan followed three years ago. As a result, the Indianapolis show is held this year not in one building or in two, but in more than a score of buildings, though they are all within a few steps of each other. The show was opened, or rather, the many units that go to make up the show were opened, on Monday, 23d inst., and will hold the boards until Saturday night.

Manifestly, no uniform scheme of decorating the numerous show rooms that are "open house for a week" was entirely feasible, and so each dealer has decorated his own display in a manner to suit himself. Nor have all of them relied entirely upon decorations and the display of new models to attract spectators. The Allen Sales Co., for instance, has two young lady pianistsaged seven and eight years, respectively: at the Ford company's rooms there is a display of motion pictures; the National company has a harpist and violinist. In fact, there are few salesrooms that have not some added attraction in the way of music, or souvenirs of some kind or another.

On Saturday there is to be a banquet to celebrate the formal closing of the show, and on Tuesday there was a parade of old cars and cars that are not so old through the business streets. Each dealer was permitted to enter one car of each year's model produced by his factory, and at the banquet prizes will be distributed to those who entered the longest strings of successive models.

All told, there are 40 brands of gasolene pleasure vehicles on view in the various salesrooms, seven makes of electrics and nine of commercials, the complete list of exhibitors, including those who display accessories, being as follows:

Allen Sales Co., Allen; Buick Motor Co., Buick; Cadillac Motor Car Co., Cadillac; J. I. Case T. M. Co., Case;

Conduitt Auto Co., Peerless and Chalmers; Brant Bros., Lozier and Chandler; W. C. Small Co., Chevrolet; Cole Motor Car Co., Cole; E. M. Holmes, Detroiter; Ford Co., Ford; Empire Automobile Co., Empire; Peterson-Keyes Co., Regal and Grant; Harry L. Archey, Havnes: Henderson Motor Car Co., Henderson; Herff-Brooks Corp., Herff-Brooks and Marathon; Hearsey-Willis Co., Hupmobile; King Co., King; C. A. Chambers, Krit; Lyons-Atlas Co., Lyons-Knight; H. H. Roose, Maxwell; McFarlan Auto Co., McFarlan; Nordyke & Marmon Co., Marmon; Marion Motor Car Co., Marion.

National Motor Vehicle Co., National: Oakland Motor Car Co., Oakland; Gibson Automobile Co., Overland and Willys-Knight; Fisher Auto Co., Packard; Partin-Palmer Sales Co., Partin-Palmer; Sterling Motor Car Co., Paige-Detroit: Premier Motor Mfg. Co., Premier; Motor Car Mfg. Co., Pathfinder; Fisher Automobile Co., Reo; Col. Whitesides, Saxon: Rowan-Buck Sales Co... Studebaker; Stutz Motor Car Co., Stutz; D. F. Holliday, Baker electrics; Treat & Warren, Borland and Broc electrics: Electric Sales Co., Woods and Detroit electrics; Rauch & Lang Carriage Co., Rauch & Lang electrics; Waverley Co., Waverley electrics.

Accessories: Auto Specialty Co.; Ajax Tire Co.; Carr's Auto Co.; Crabb Auto Co.; Dayton Airless Tire Co.; Diamond Chain Works; Eisemann Magneto Co.; Frank S. Feeser Co.; B. E. Griffev Co.; Gates Mfg. Co.; Gibson Auto Co.; Glover Equipment Co.; G & J Tire Co.; Guarantee Tire & Rubber Co.: Goodyear Tire & Rubber Co.; Hackney Auto Plow Co.; Hassler Shock Absorber; Hearsey Willis Co.; Haywood Tire & Equipment Co.; International Metal Polish Co.; International Harvester Co.; Irwin Robbins; Lee Tire Sales Co.; Miller Rubber Co.; McCullough Motor Supply Co.; Pumpelly Battery Co.; Republic Tire Co.; Stewart-Warner Corp.; Sanborn Electric Co.; United States Tire Co.; Wizard Motor Co.

## Wrinkle for the Work Bench.

A convenience on the work bench is a sunken section, say six inches or so wide, at the back, where tools can be put without fear of their rolling off, and where small things that are to be used soon can be placed without danger of their being "buried" or accidentally brushed away If the sunken section is impracticable much the same result can be secured by running two parallel strips of wood along the bench the desired distance apart.

# HARTFORD SHOW IS OPENED WITH FIREWORKS AND CIRS

Street Lights Flash as Casino Doors
Are Thrown Open—Thirty-six
Exhibitors Display Thirty
Makes of Cars.

Smaller, but more select, than its immediate predecessor, Hartford's seventh annual show was opened in the Park Casino in the evening of Washington's birthday with more than ordinarily impressive ceremonies; there was firing of guns and the flaring of fireworks, and the lights of Elm street, dark until the opening hour, suddenly flashed up as the doors of the building were thrown open. The Hartford (Conn.) Automobile Dealers' Association stands sponsor for the event, which will continue the center of attraction until March 1st.

Although the building that houses the show is considerably smaller than the State Armory that has served on previous occasions, and the decorations are not as ornate as they have been in past years, they nevertheless leave little to be desired from an esthetic point of view. Across the arched roof of the old Armory there were streamers of Southern smilax half hiding rows and rows of brilliant tungstens. The recently remodeled interior, which is finished in blue and gold, has been rendered more beautiful by hangings of the same colors along the side walls. The complete list of exhibitors is as follows:

Britton Co., Maxwell, Oakland. Rauch & Lang; Dillon Court Garage, Stutz; Buick Garage Co., Buick: Brown. Thomson & Co., Cadillac; Miner Garage Co., Pierce-Arrow; Magna Auto Co., Detroit elesctric; Universal Auto Co., Franklin; F. A. Law Machine Co., National; Edward Clark, Paige-Detroit and Chandler; F. W. Dart, Oldsmobile, Waverley, Mitchell; Packard Motor Car Co., Packard; George Knox, Peerless, Hudson, Broc electric; Russell Taber, Reo and Pullman; Capital City Auto Co., Lozier; Pope Mfg. Co., Pope-Hartford; Electric Auto Station, Ohio electric; E. H. Harris, Overland; R. M. Spencer, Kissel; Stevens-Duryea Co., Stevens-Duryea; Elmer Auto Co., Ford; New England Garage Co., Chevrolet; S. A. Foster & Co., Jeffery and White; F. F. Woolley, Baker electric; J. M. MacDonald & Co. Velie; Chalmers Auto Agency, Chalmers and Saxon; J. D. Parker, Hupmobile; Imperial Motor Car Co., Imperial and Grant; Brassill Garage, Imp cyclecar; W. N. Barrett, Metz; M. J. Bliss, Cole.

## FIREPROOF DRAPERIES FOR SYRACUSE DEALERS' SHOW

Forty-Six Makes of Cars Displayed by 40 Dealers Under Tan and Blue and National Colors -The Exhibitors

Under fireproof decorations that are none the less eye-pleasing for the fact that they are fireproof, the sixth annual show of the Syracuse (N. Y.) Automobile Dealers' Association was opened on Tuesday evening, 24th inst., in the Cavalry and Infantry Drill Halls, which are both under the one roof; it will hold the boards-and the tanbark-until Saturday night, 28th inst.

The decorative scheme for the show is far more elaborate than for any previous show, the color arrangement in the Infantry Hall being tan and turquois blue. Streamers of fireproof bunting are draped from the side walls up to the ceiling and along the walls and the balcony there are quantities of smilax. In the Cavalry Hall, the decorations are of a more patriotic description, one immense American flag serving as the "sky" with panels of red, white and blue around the side walls. Ornamental placques, carved posts and uniform markers, representing great wheels, are used to designate the exhibits. There are 46 brands of pleasure and commercial vehicles exhibited by 40 dealers, and 13 exhibits of accessories, the complete list of vehicle exhibitors being as follows:

Vehicles: H. A. Moyer, Moyer; Genesee Motor Car Co., Cadillac; Overland-Syracuse Co., Overland; A. A. Ledermann Co., Pierce-Arrow; A. H. Mac-Graw, Metz; Chalmers-Syracuse Co., Chalmers, Saxon, Hupmobile; Wightman & Rich, Winton; Crosby Garage Co., King, White; J. I. Case T. M. Co., Case; Franklin Automobile Co., Franklin; J. M. Weaver Co., National, Stutz; W. R. Shaw, Reo, Oldsmobile, Chandler; Syracuse Motor Car Co., Paige-Detroit; Ford; Stowell Motor Car Co., Packard and Hudson; Bartlet & Smith, Studebaker; Syracuse Buick Sales Co., Buick; Bennett Garage Co., Wahl; Stewart W. Monroe, Stevens-Duryea; Kissel Kar Mfg. Co., Kissel; Oakland Sales Co., Oakland; Dr. H. B. Hawley, Detroit electric; Apperson Bros. Auto Co., Apperson; J. E. Bristol, Mitchell; International Harvester Co., International; Louis Vaeth's Sons, Gramm Truck; Chase Motor Car Co., Chase truck; W. R. Shaw, Reo, Knox; Stowell Motor Car

Co., Stewart and Packard trucks; Crosby Garage Co., White; Genesee Motor Car Co., Cadillac; Sanford Motor Truck Co., Sanford truck; Palmer-Moore Co., Palmer-Moore truck; Syracuse Buick Sales Co., Buick; A. J. Jackson, Repub-

## No Empty Spaces at Salt Lake Show.

With every inch of available space crowded, the third annual Inter-Mountain show of the Salt Lake City (Utah) Dealers' Association was opened in the Keith Building, on Tuesday, 7th inst., and closed against on the 21st. Despite the inclement weather, a record crowd gathered soon after the doors were opened. Among the exhibitors were the following:

Reliable Motor Car Co., Oakland; Apperson Motor Car Co., Apperson; White Co., White; J. P. Fowler Co., Pullman and Chevrolet; Marshall & Johnson, Maxwell; Petty Dirigible Light Co., Studebaker; Speedwell Motor Car Co., Speedwell and Wagenhalls commercials; Lon Classin, Stutz; Landes & Co., Avery commercials; Salt Lake Auto Co., Willys Utility and I. H. C. commercials: Randall-Dodd Co., Oldsmobile and Buick; Grady-Rousche Motor Car Co., Reo and Velie; Utah Motor Car Co., Packard; Browning Automobile & Supply Co., Cole and Overland; Sharman Automobile Co., Cadillac; Cheesman Automobile Co., Chalmers; Tom Botterill. Pierce-Arrow and Hudson; Spiker Electric Garage Co., Standard electric pleasure cars.

### Easton's Show for Charity's Sake.

Down in Easton, Pa., it has been demonstrated that the combined efforts of a hospital management and a squad of militia can make a success of an automobile show. The exhibit in question was held in the City Guard Armory in that Pennsylvania city from Wednesday, February 18th, to Saturday, 21st, last, and was sponsored by the City Guard and the Easton Hospital. Maroon and white were the dominating colors in the decorative scheme, all tendency toward harshness being relieved by Japanese lanterns which shed a soft glow on the setting. Seven dealers displayed eight different makes of motor vehicles. two of which were commercials, and a handful more exhibited accessories. Those who showed vehicles were as follows: Rader & Colner, Buick and Dorris truck; Winton Motor Co., Winton; James Itterley, I. H. C. truck; H. Searles, Jeffery; J. H. Fulmer Automobile Co., Ford; J. R. Keefer, Chevrolet; Allen Motor Co., Hudson.

## FALL RIVER ANNUAL SHOW IS SPONSORED BY MILITIA

And Coast Artillery Corps Furnishes One of the "Long Stroke" Exhibits-Nine Dealers Display 15 Cars in Drill Shed.

With the drill shed of the armory fittingly decorated with flags and streamers in the national colors, Fall River (Mass.) inaugurated its fourth annual automobile show on Saturday evening last, February 21st; the exhibit will hold the boards for one week until Saturday night, 28th inst. The present show, unlike those which have preceded it, is under the auspices of two companies of the Massachusetts Volunteer Militia, working in conjunction with a company of the Coast Artillery Corps, and not the least attractive exhibit was furnished by the latter in the shape of a piece of ordnance bearing a sign with the inscription "Trico Car, 4-inch bore, 3-mile stroke, self-starter." Fifteen different makes of motor vehicles, both pleasure and commercial, are shown by the nine dealers in motor vehicles who hold space; half a dozen dealers in accessories also are on hand. The complete list of exhibitors is as follows:

J. E. Newton Co., Chalmers and Stevens-Duryea; Somerset Automobile Co., Reo; H. A. Horton, Overland and Cadillac; Fall River Automobile Co., Studebaker pleasure and commercial; Mount Hope Automobile Co., Oakland; Place Garage, Franklin, Buick and White and Buick commercials; Foss-Hughes Co., Pierce-Arrow; Packard Motor Car Co., Packard pleasure and commercial; Robert W. Powers, Hudson and Peerless; Congdon-Carpenter Co., Wilmot-Edison Co., Standard Oil Co., Acco Lubricant Co., James N. Buffington, J. B. Breeze.

#### "Anti-freeze" That Proved "Ante-freeze."

The next time a salesman says "Antifreeze" to a car owner in Tulsa, Okla., the salesman's fleetness of foot is likely to stand him in good stead; Tulsa motorists since last week have been mixing their own anti-freeze or draining their radiators on cold nights. A short time ago a supplyman stocked and disposed of about 100 bright yellow cans of a "guaranteed" anti-freeze mixture at \$1 a can. Many motorists had until then been draining their radiators at night, but the whole five score were converted to antifreeze with the result that the next morning the anti-freeze was found frozen solid.

### MOVE FOR INVESTIGATION OF PRICE-CUTTING

# National Chamber of Commerce to Name Committee to Learn Truth of Situation—Views of the Manufacturer and of the Department Store Presented at Annual Meeting of Business Congress.

Recognizing the importance of the price-cutting question, the Chamber of Commerce of the United States at the close of its recent annual session in Washington passed a resolution requesting the chamber to name a special committee to investigate this phase of business; the Chamber went rather deeply into the price maintenance matter at its ession and devoted much time to the Oldfield bill, which would make pricefixing illegal; it has been declared illegal by the Supreme Court, but no statute governs the situation.

#### Ingersoll and Dey Express Opinions.

In the hearing, Commissioner of Corporations Joseph E. Davies summed up the history of the price question, but, being a government official, did not commit himself as did some of those who gave their views freely. William H. Ingersoll, of Robert H. Ingersoll & Bro., makers of the "dollar watch," and Donald Dey, of Dey Brothers & Co., a department store of Syracuse, N. Y., expressed pointed opinions on the question. Ingersoll spoke for the manufacturer and Dey for the department store.

"We now have standard brands in nearly every field of merchandise," said Ingersoll, "so that if the consumer once finds a satisfactory article, it can be duplicated not only at the same store, but in every section of the country, without waste of time, without experiment or disappointment, and even a child can buy with security and assurance against overcharge.

#### Driving Trade to the Larger Stores,

"But new problems in merchandising come with each decade, and now we find the standard brands being employed against the wishes of their producers to further the tendency to monopoly in the retail market. The process used by certain classes of retailers not only threatens the existence of the brands themselves, but tends to divert trade from the local centers to the great stores of the great cities, oppress the thousands of small merchants in cities and smaller towns and is bringing about that same concentration of business in the retail field which has thrust upon the Amer-

ican people the trust problem. The cut price is now being ruthlessly used on the country's well-known standard brands of merchandise in combination with exaggerated bargain claims on miscellaneous and unknown commodities, and with disastrous effect upon the business of the branded goods themselves.

#### Quantity Discounts Held Unfair.

"The present unscientific, unfair scale of quantity discounts allowed generally to large buyers is turning the retail business into one not of merchandising but of financial manipulation to combine outlets so as to gain buying power and be able to under-buy the general run of merchants. A premium is put upon mere size, permitting wastefulness of management through unearned buying advantage, penalizing the small independent dealer, closing the way to the newcomer and making it impossible for the individual retailer to compete regardless of how capable he may be. Even our newspapers, through their advertising discounts, practically close their columns to the small advertiser. Quantity discounts should be reduced to scientific scale or abolished, as rebates for quantity freight shipments have been abolished under the law.

#### Small Customer Needed for Future.

"The manufacturers of the country are appealing for the recognition of their right to exercise control over the manner in which their own goods are sold after they have been entrusted to the market. One important reason is that they see their smaller customers who generally handle their merchandise fairly, being undermined and their own future market reduced to the fewer large retail institutions which would then have them more fully in their power.

#### Small Man Not so Able to Cut Price.

"It is true that the manufacturers have helped to build up the present system by their price discriminations, although it is less true of the maker of standard brands than of miscellaneous wares. It is equally true that the utmost pressure, backed up by great buying power, has been exercised by the great retailers to further their advantage and that their percentage of operating expense is greater than that of the smaller stores, requiring that they buy cheaper or be unable to compete. We must not miss the point that price cutting is a practice not open to the small man because he cannot advertise extensively, he cannot offer cut prices on one thing and recomp on other things, because his lines are limited and his capital small. Some sort of regulation must be exercised under legal sanction so that cut-throat methods in the hands of those with large capital may not be used to oppress the smaller man unfairly. The manufacturers of standard brands urge that the one-price system which has been found so beneficial in the individual store be extended to the standard brand.

#### Retailer Essential to Merchandising.

"We need the retailer. No better way has been found for getting goods from the factory to the users than through the century-old system of the maker, the wholesaler and the retailer. Systems which pretend to eliminate these factors are found simply to set up employed managers of great corporations in place of the individual proprietors of the other system, and without their self-interest for economical management and to duplicate the older system in every one of its features. There are no savings but merely a change of form, and experience will prove that the change is not for the better."

#### The Department Stores' Viewpoint

Donald Dey, speaking on the subject of "Price Maintenance from the Retailers' Point of View," said in part: "At the point where the manufacturer's agent comes in touch with the retailer with an advertised article, and where that article has intrinsic value and unquestionable merit, it is a simple matter to do business, provided the article offers a fair margin of profit to the merchant, and provided that the exclusive sale is to be given that merchant. The maintenance of price in this case is easy and seems justified and reasonable, but when the article becomes an article of universal sale then many new elements enter into consideration. Here we have the manufacturer bring about a situation for his own interests that has a feature of damaging influence in it to the retailer. He has at once become a procuring cause in a situation that presents tempting opportunities for price cutting.

"The widely advertised article has become an article of great capacity for the establishment of unfriendly competition, indeed it may not be going too far to assign to it the cause. If the manufacturer has given an article of value, in pricing it he must take into account his overhead charges, his selling expenses, and in addition his advertising expense. Here is a point where the retailer may very properly question the manufacturer as to the wisdom of prodigal advertising. The margin of profit must carry this advertising, and therefore it must be admitted that the article itself carries this as a fixed charge, and the consumer pays the bill.

#### Retailer Partially Innocent Party.

"The retailer, to a degree, is an innocent party. The energy of the manufacturer has filled the public mind with a desire for the article and the merchant must meet this demand. It has occurred to me that the merchant has a moral responsibility in adopting an extensively advertised article, and when he does so, he has, by this act, endorsed what the manufacturer has said, and also the quality of the article itself. In other words, he is binding himself down to a proposition that may in the near future become a thorn in his commercial side."

Later in his address he made the remark: "Chain stores, no matter whether it be shoes, or something else that is nationally advertised, are unresponsive to community interest. Local merchants have a most trying situation created for them by the aggressive advertising of a manufacturer engaged in national advertising. He may stock the article and be a loser. He may seek to effect a peace compact on price with his neighbor and then bump up against a national law that is rigid.

#### Trade-Marked Goods Not Over-Popular.

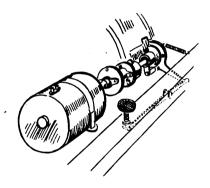
"If it becomes necessary for me to answer the question whether advertised goods, so far as our line of merchandise (dry goods) is concerned, are equal or better than goods that are untrademarked, my experience would compel me to answer that the open market gives us the most goods for our money, therefore the commercial and the consumer's interests are better served from the open market than from advertised specialties. Undoubtedly the unadvertised goods escape the additional cost of advertising, and therefore it is reasonable to suppose

that the merchandise will cost just that much less."

Simplicity in Austin Starter Drive.

Whatever advantages there may be in simplicity in the drive from a starting motor to the engine seem to have been made the most of in the system employed in the English Austin car, the starter drive of which is shown in the accompanying illustration. Not only is there no gearing, in the ordinary sense of the term, but there is very little else, as the picture shows.

The electric motor is located close to the engine with its shaft fore-and-aft. The motor shaft is extended, the extension being carried by a pair of universal



AUSTIN STARTER DRIVE

joints-which, incidentally, are of the simplest type, with flexible disks to allow shaft deflection-and on the shaft end is a friction roller. A shifter for moving the roller, movement of which is permitted by the universal joints, completes the equipment, so far as the driving mechanism is concerned. When the engine is to be started the roller is merely shifted against the plain rim of the flywheel, the transmission being effected through friction; and when the engine has been started the roller is moved away. When driving, the motor shaft is perfectly straight, so that the universal joints are idle, except that they transmit torque. When the joints are flexed by the shifting of the shaft the motor is stopped, so that they have very little real work to do. The system is said to work very well in actual service.

#### What Caused Most of Indiana Car Fires.

Of 19 automobile fires in Indiana since last May, 12 were due to gasolene explosions, 3 to defective wiring, 1 to overhead exhaust, 2 to carelessness with matches and 1 to an adjoining fire. There

were 41 fires in all, and the remaining 22 were of unknown origin. In but six cases were the cars totally destroyed; the total loss was \$8.736.

State Fire Marshall W. E. Longley, in his report, recommends especially care in the cleaning of cars with gasolene in enclosed garages. Spraying by air pressure, he states, is dangerous, in that it speedily fills the garage with a highly explosive mixture, one pint of "gas" charging 200 cubic feet of air to the danger point.

#### Try This on Your Car Some Morning.

Talking about starting motors in cold weather, most people do not really know what easy starting is. There's one chauffeur who has burst into print with the statement that it's the easiest thing in the world to start his particular variety of motor, and supports his statements by telling the simple way in which it is done. Here's the list:

"Jack up one of the wheels and carefully block the other so it won't roll.

"Pour hot water into the radiator while letting the cold water run out of the drain cock, and when the radiator is warm fill it up with hot water.

"Screw down the carburetter adjustment to shut off the gas.

"Turn the engine over several times to expel cold air from the cylinders, making sure that the clutch is disengaged.

"Open the carburetter needle valve a good deal too much and flood the carburetter freely.

"Bandage the carburetter with a rag wrung out in the hottest kind of water. "Throw in the clutch so the motor will drive the jacked-up wheel.

"Crank the engine—and it ought to start.

"Let the engine warm up and readjust the carburetter.

"Take the jack out from under the rear wheel."

By this time it will be about time to get ready for the next day's work, and the motor ought to be nice and warm and all ready to be started without further bother.

#### Dealer Sues Because of Bad. Road.

The Rutland (Vt.) Automobile & Machine Co. has brought suit in Rutland county against the town of Fair Haven for \$600 damages alleged to have been sustained by a car because of a defective highway; it is claimed that while one of the company's employes was driving one of its cars between Fair Haven and Hydeville July 25, 1913, the car was overturned and badly damaged because of the condition of the road.



1,079,175. Automobile Tire. Edwin A. Howe, Bancroft, Ia. Filed Feb. 21, 1913. Serial No. 749,989. (Spring tire.) 1 claim.

1,079,205. Automobile Top. Carl V. Beebe, Mount Gilead, O. Filed June 25, 1912. Serial No. 705,733. (Canopy top, side curtains and containing cases.) 9 claims.

1,079,220. Explosion-Motor for Cars and the Like. William F. Davis, Kansas City, Kan., assignor to McKeen Motor Car Co., a corporation. Filed Oct. 10, 1905. Serial No. 282,153. (Opposed cylinder motor and driving gear for rail cars.) 31 claims.

1,079,237. Steering Wheel Hand-Warmer. Clarence J. Hallum, Wilton, N. D. Filed March 8, 1912. Serial No. 682,454. (Fuel-burning tubular heater for steering wheels.) 8 claims.

1,079,249. Automobile Shock Absorber. Newton H. Lines, Arapahoe, Neb. Filed Dec. 28, 1911. Serial No. 668,379. (Auxiliary spring shock absorber.) 1 claim.

1,079,255. Internal Combustion Engine. William R. McKeen, Jr., Omaha, Neb., assignor to McKeen Motor Car Co., Omaha, Neb., a corporation of New Jersey. Filed Aug. 13, 1907. Serial No. 388,285. (Multiple cylinder motor with single watear-jacket.) 3 claims.

1,079,273. Auto Tire-Protector. Albert Senter Standish, Cleveland, O. Filed Nov. 22, 1912. Serial No. 732,996. (Protecting tread and spring fastenings.) 2 claims.

1,079,305. Kuockdown Wheel. John E. Strie telmeier, Cincinnati, O., assignor to The Ideal Wheel Co., Cincinnati, O., a corporation of Ohio. Filed March 10, 1913. Serial No. 753,347. (Spring wheel with flat spring steel spokes.) 26 claims.

1,079,307. Internal Combustion Engine. Norris C. Ward, Chicago, Ill. Filed May 27, 1912. Serial No. 699,987. (Motor with reciprocating cylinder.) 5 claims.

1,079,320. Automobile. Henry A. Baker, St. Louis, Mo. Filed Jan. 26, 1912. Serial No. 673,-694. (Cooling system with electric resistance coil.) 7 claims.

1,079,364. Engine. Frank W. Ruggles, Springfield, Mass., assignor of one-half to Emerson G. Gaylord, Chicopee, Mass. Filed Sept. 2, 1909. Serial No. 515,743. (Two-cycle motor with valves.) 8 claims.

1,079,422. Internal Combustion Engine. Jas. McKechnie, Barrow-in-Furness, England, assignor to Vickers, Ltd., Barrow-in-Furness, England. Filed Nov. 23, 1911. Serial No. 661,995. (Motor of the fuel injection type.) 4 claims.

1,079,468. Radiator for Automobiles. John W. Bowerbank, Los Angeles, Cal. Filed Sept. 16, 1912. Serial No. 720,681. (Built-up sheet metal radiator.) 2 claims.

1,079,477. Transmission Mechanism. Henry Devlin, Bay City, Mich., assignor to The Ma. Garland Co., Bay City, Mich., a corporation of Michigan. Filed Feb. 2, 1912. Serial No. 674,877. (Chain-and-sprocket change-speed mechanism.) 5 claims.

1,079,515. Pneumatic Tire. Rene Rondeau, Paris, France, assignor to Societe Fermiere de l'Automatique Ducasble, Paris, France. Filed Feb. 7, 1911. Serial No. 607,168. (Cellular Cushion tire.) 1 claim.

1,079,607. Transmission and Steering Mechanism for Motor-Driven Vehicles. Harry H. Schieler, Meadows, Idaho, assignor of fourtenths to Thomas Benton Snyder, Meadows, Ida, and two-tenths to Nathan H. Hall, St. Louis, Mo. Filed March 16, 1912. Serial No. 684,236. (Worm-and-gear driving system) 20 claims.)

1,079,622. Internal Combustion Engine. John Willoughby, New York, N. Y., assignor of one-

half to George W. Bayley, Brooklyn, N. Y. Filed June 9, 1911. Serial No. 632,153. (Two-cycle motor with two-diameter pistons and valve mechanism.) 1 claim.

1,079,643. Valves for Engines. Thayer B. Farrington, Columbus, O. Filed March 19, 1913. Serial No. 755,288. (Rotary valve system.) 6

1,079,644. Vehicle Wheel. Ralph K. Gratigny, Edgewater, N. J. Filed July 5, 1912. Serial No. 707,652. (Wheel with pneumatic cushion under rim.) 2 claims.

1,079,695. Vehicle Advancing by Means of Artificial Legs. Adolf Ehrlich, Budapest, Austria-Hungary. Filed Sept. 11, 1911. Serial No. 648,710. (Car propelled by jointed legs at front.) 6 claims.

1,079,725. Electrical Engine Starter. Samuel W. Rushmore, Plainfield, N. J. Filed Nov. 13, 1912. Serial No. 731,094. (Current control for starting motor.) 13 claims.

1,079,741. Internal-Combustion Engine. Fred D. Calkins and Alfred C. Johnson, Sunnyvale, Cal. Filed Feb. 15, 1912. Serial No. 677,655. (Rotary valve engine.) 12 claims.

1,079,742. Internal-Combustion Engine. Fred D. Calkins and Alfred C. Johnson, Sunnyvale, Cal. Filed May 8, 1912. Serial No. 695,847. (Rotary valve engine.) 4 claims.

1,079,747. Transmission Gearing. John F. Davis and Ralph L. Ford, Decatur, Ill., assignors to Pioneer Implement Company, Council Bluffs, Iowa, a Corporation of Iowa. Filed Mar. 9, 1912. Serial No. 682,776. (Bevel gear transmission system.) 12 claims.

1,079,765. Windshield for Automobile Radiators. Albert Hoiland, Nome, N. D. Filed June 17, 1912. Serial No. 704,148. (Radiator shield opened and closed by changes of water temperature.) 2 claims.

1,079,832. Plow. James G. Brock, Anadarko, Okla. Filed April 27, 1912. Serial No. 693,641. (Motor plow with adjustable rolling coiter.) 3 claims.

1,079,840. Spring Wheel. James Dell Collier, Redlands, Cal. Filed Oct. 11, 1912. Serial No. 725,227. (Wheel with curved spring spokes.) 4 claims.

1,079,845. Explosive Engine. Benjamin Blake Dorr, West Toledo, O. Filed May 18, 1912. Serial No. 698,233. (Single chain drive for pump, magneto and valve shaft.) 6 claims.

1,079,842. Shock Absorber for Automobiles. Walter H. Cook, New Orleans, La. Filed Aug. 14, 1913. Serial No. 784,794. (Air-cushion device.) 4 claims.

1,079,844. Dirigible Lamp for Automobiles. Wm. B. Dievendorf, Sprakers, N. Y. Filed July 25, 1913. Serial No. 781,240. (Headlights moving with steering gear.) 3 claims.

1,079,846. Folding Chair for Automobiles. Wm. H. Douglas, Belleville, N. J., assignor to Healey & Co., New York, N. Y. Filed May 20, 1913. Serial No. 768,758. (Folding seat with sliding collapsible legs.) 8 claims.

1,079,856. Automobile with a Pivot-Gun. Georg Hayn, Essen-on-the-Ruhr, and Norbert Koch, Essen-Rellinghausen, Germany, assignors to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Oct. 19, 1911. Serial No. 655,601. (Gun mounting for military automobile.) 2 claims.

1,079,872. Vehicle Fender. Joseph Mascari, Memphis, Tenn. Filed Feb. 28, 1911. Serial No. 611,325. (Fender dropping when bumper is struck.) 1 claim.

1,079,878. Vaporizer and Igniter for Internal-Combustion Engines. Wilber O. Platt and John Reid, Oil City, Pa., assignors to Joseph Reid Gas Engine Co., Oil City, Pa., a corporation of Pennsylvania. Filed Oct. 8, 1912. Serial No. 724,588. (Vaporizer and igniter operating by heat from previous explosions.) 8 claims.

1.079,904. Pressure-Regulating Means. Julian Leigh Perkins. Springfield. Mass., assignor, by mesne assignments, to Fred E. Muzzy, Springfield, Mass. Filed March 1, 1912. Serial No. 680,978. (Pressure reducing valve.) 3 claims.

1,079,907. Tread-Section for Anti-Skidding Devices. Harry D. Weed, Syracuse, N. Y. Filed March 26, 1908. Serial No. 423,323. (Special chain for non-skids.) 6 claims.

1,079,917. Electric Motor-Wheel. Karsten Knudsen, Grand Rapids, Mich., assignor, by direct and mesne assignments, to Electric Weel Co. (Associates), Springfield, Mass. Filed May 24, 1912. Serial No. 699,583. (Gear-meshing guide for internal drive of Couple-Gear wheels) 11 claims.

1,079,925. Spring Felly. Frank Monroe Prather, Los Angeles, Cal. Filed Feb. 24, 1913. Serial No. 750,437. (Wheel with springs between inner and outer rims.) 2 claims.

1,079,934. Speed-Varying Transmission. Frederick H. Cheyne, Indianapolis, Ind. Filed Oct. 4, 1912. Serial No. 723,893. (Hydraulic transmission system.) 15 claims.

1,079,950. Vaporizer Attachment. Edward Moris Norton, New York, N. Y., assignor to De La Vergne Machine Co., New York, N. Y. Filed Feb. 6, 1913. Serial No. 746,581. (Means for mixing steam with gas charges.) 5 claims.

1,079,951. Automobile Attachment. Robert H. Prestien, Norfolk, Va. Filed June 8, 1912 Serial No. 702,621. (Combined fender and bumper.) 4 claims.

1,079,961. Transmission Mechanism. John G. Utz, Detroit, Mich. Filed Nov. 22, 1910. Serial No. 593,654. (Sliding gear selectively controlled.) 6 claims.

1,079,965. Tire Gauge. John F. Waters, Kansas City, Mo. Filed June 29, 1912. Serial No. 706,610. (Tire pressure gauge with hose connection.) 3 claims.

1,079,995. Wheel for Motor Cars and Other Vehicles. Wm. Thomas Smith, Bolton, England. Filed July 11, 1908. Serial No. 443,047. (Side ring for detachable rim wheels.) 3 claims.

1,080,000. Hydraulic Power-Transmission Device. Andre Citroen, Paris, France. Filed Feb. 3, 1913. Serial No. 754,922. (Non-return System for hydraulic transmissions.) 4 claims.

1,080,004. Wheel for Road-Vehicles Walter D. Douglas-Jones, London, England. Filed Dec 16, 1909. Serial No. 533,503. (Spring wheel with rubber cushions.) 3 claims.

1,080,033. Storm-Shield for Vehicles. Charles F. Wensinger, Fremont, O. Filed Jan. 10, 1913. Serial No. 741,141. (Adjustable windshield.) 9 claims.

1,080,035. Wagon. Edwin M. Wheelock, Winona, Minn. Filed Jan. 21, 1913. Serial No. 743,261. (Trailer vehicle with automatic steering system.) 7 claims.

1,080,054. Armor-Chain. Phibia Gauthier, Lowell, Mass. Filed May 15, 1913. Serial No. 76. 826. (Sheet metal tread-protecting links.) 6 claims.

1,080,106. Spring and Pneumatic Wheel Jos A. Gray, Norwalk, Conn. Filed July 7, 1910. Serial No. 570,907. (Wheel with piston-and-cylinder spokes forming air cushions.) 5 claims.

1,080,110. Changeable Headlight. Victor Howard and James P. Wrigley, Oakland, Cal. Filed March 6, 1913. Serial No. 752,380. (Headlight moving with steering gear.) 1 claim.

1,080,111. Universal Joint. Russell Huff. Detroit, Mich., assignor, by mesne assignments, to Packard Motor Car Co., Detroit, Mich., a corporation of Michigan. Filed Jan. 27, 1908. Serial No. 412,865. (Enclosed universal joint.) 4 claims.

1,080,123. Internal-Combustion Engine. Dos E. Pratt, San Francisco, Cal. Filed July 10, 1912 Serial No. 708,625. (Rotary valve motor.) 7

1,080,139. Gasifier for Liquid Fuels. William L. Corson, San Francisco, Cal., assignor to Union Gas Engine Co., San Francisco, Cal., a corporation of California. Filed Feb. 20, 1912. Serial No. 678,793. (Vaporizer heated by exhaust gases.) 5 claims.





Every man who ever purchased a Pathfinder car is now a Pathfinder owner.

Some owners have purchased several Pathfinder cars during the various seasons.

OWNERS: A stronger reason for your purchasing a Pathfinder could not be given.

DEALERS: If you hold the customers you make and continue to get new customers, in a few years you will have an exceedingly valuable business.

The Pathfinder has that record.

Write to-day stating the situation with you and asking for a copy of our 101 Reasons. Write us a long letter.

Motor Car Mfg. Co., 1138 Division St., Indianapolis



Have Quite Successfully Copied the



(Licensed Under Basic Patent for Treated Wood Separator)

## 1912 Battery

and are now busily engaged in trying to imitate our 1913 type.

However, the copyist must, of necessity, be always behind, and it is our experience that the storage battery copier is never less than an entire year back in the wake of the CLBAS.

The original, the pioneer among storage batteries for use with electric lighting and starting equipment on gasoline cars is the CLBAS.

Always strictly up-to-the-minute, the CLBA9, in performance, leaves nothing to be desired. Our manufacturing facilities insure a volume of output that may be relied upon for prompt deliveries when utmost promptness is a vital consideration.

We have no old "chestnuts" to dispose of or to work off on unsuspecting purchasers and when you buy the SUBAS you secure the last word in starting and lighting batteries.

### WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd St.

Detroit Branch: 736, 738 and 740 Woodward Ave.

Indianapolis Branch: 438 and 439 Indiana Pythian Bldg.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO. (87)

# ANNOUNCEMENT

# RUDGE-WHITWORTH Detachable Wire Wheels

Will hereafter be made for the George W. Houk Company by the Houk Manufacturing Company of Buffalo, New York. Delivery to commence March 15th.

This will in no way effect the marketing of the HOUK WIRE WHEEL now made by the HOUK MANUFACTURING COMPANY, for the GEORGE W. HOUK COMPANY.

Owing to our largely increased manufacturing facilities, NEW PRICES will be announced for the RUDGE WHEELS early in march.

## GEORGE W. HOUK COMPANY

Licensed Under Rudge-Whitworth

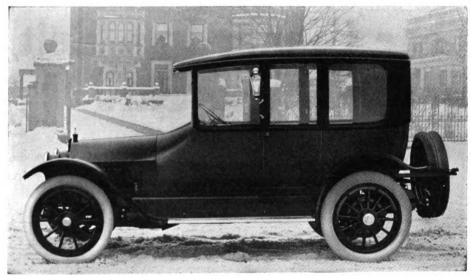
1700 Elmwood Ave.

Buffalo. New York

# THE NEW Stearns-Knight Sedan

OR the owner who likes to drive, and who wants the luxurious comfort of closed car construction during the winter months, the new Stearns-Knight Sedan offers all the advantages of the Limousine in a smaller, lighter car. Seating five persons, all facing forward, and with inside drive, the Sedan type of body is the ideal of many owners for winter use in town. When finished and appointed in the Stearns way, and mounted on the wonderfully smooth-running and efficient Stearns-Knight chassis, it affords a luxury that is not exceeded by any other car.

Prices: Four-cylinder, \$5000; Six-cylinder, \$6100 Other models \$3750 to \$6200



Stearns-Knight Four-Cylinder Sedan

THE F. B. STEARNS COMPANY
Cleveland, Ohio

# Special Ford Fan Belts

# An Item of Profit in Your Spring Refitting Trade You Shouldn't Overlook

A Fan Belt is not a very big item in a Ford's equipment—it is true—but it is none the less important that you select a belt that—

Will not stretch or break and make constant attention necessary.

One not affected by grease or water.

A belt with plenty of friction so it will not slip and let the fan lag. One which is woven closely and firmly, impossible to fray out and work to pieces.

# The Gilmer Fan Belt for Ford Cars

is the belt you should use. It possesses every advantage of the ideal fan belt without the usual weaknesses of ordinary belts. It costs a little more than the ordinary kind but is so small an item that you cannot afford to use cheap makeshifts.

Write for particulars—also about Gilmer Rebound Straps for all cars—big and little—and Gilmer Anti-Squeak Frame Lining.

# L. H. Gilmer Company

52 North Seventh St., Philadelphia, Pa.

### "On Behalf of My Associates and Myself I Want to Thank The Many Dealers—Old Friends and New—For Their Reception of Our Car and Our Company"—Benj. Briscoe

THE wonderful sales record of our car at the New York, Chicago and other shows, we believe, has never been surpassed in the history of the industry.

This surely indicates that the dealers have confidence in our product and in our company, and makes us happy indeed.

I want to thank the many dealers, old friends and new, on behalf of my associates and on my own account, for the splendid and spontaneous reception given to our car and to our company.

The very large demand for our car has caused us to make arrangements with our Manufacturing Department for an increased output, so that we will be able to execute contracts, based upon a larger production than we at first contemplated.

Inquiries from dealers in small cities and towns are especially welcome. We desire to deal direct with dealers wherever it is possible. We have one contract—the same for all.

I am very glad to be able to say that our manufacturing preparations are progressing most satisfactorily. We expect to begin

#### SHIPMENTS IN APRIL

We are "tooling up" in the best possible manner and our efforts are concerned only in such methods as will accomplish a uniformity in parts and the highest quality of workmanship. Chrome Vanadium steel is used practically throughout the car and all other parts are likewise of the highest quality.

Our rule of conduct—"Quality First, Last and All the Time"—is the guiding principle with us.

One of the best and most gratifying things connected with our reception by the industry, was the almost unanimous expression of good will on the part of the older automobile companies. Many of them are now regularly referring their dealers, who are seeking a smaller car, to ours as being the high grade medium sized car, and so a fit running mate for their higher priced, high grade productions.

#### WE ARE SATISFIED WITH SMALL PROFIT

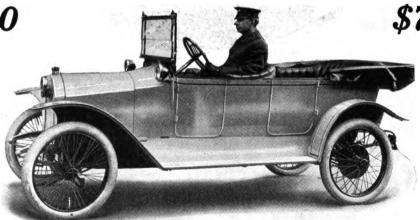
We heard at the shows, the remark made many times—"You cannot do it at the price." We acknowledge that we are giving wonderful value, but we are satisfied with small profit. There are only five of us in this company, all active automobile men, and we are not desirous of getting rich too rapidly.

Our risks are negligible, because the car has been thoroughly developed and tested out, and we believe that this year's production of from five to seven thousand cars will surely mean a demand for from ten to fifteen thousand next.

The Briscoe car is honestly made and thoroughly good. Its appearance speaks for itself. Its action will be conclusive evidence of its goodness. Our customers will be our best salesmen.

Buy Briscae President

THE BRISCOE CAR



The New \$750 Briscoe Car Designed by American Engineers; and "tailored" by Paris Artisans of Style Creation.

Equipment: Electric lamps, horn, accumulator, demonstable rims and tool equipment - \$750. With
above and electric lighting generator and electric self-starter, top and boot, windshield - \$900.

BRISCOE MOTOR COMPANY

General Offices, Broadway and 59th Street, New York

Factories at Jackson, Michigan

## Least Expensive In The Long Run

One broken spring will cost you in money, delay and annoyance far more than GOOD springs would have cost originally.

The amazing strength and toughness put into Cleveland-Canton Chrome-Vanadium Springs is due to the process by which they are made.

Instead of a single rolling, the steel in Cleveland - Canton Chrome - Vanadium



Springs is cross-rolled, both lengthwise and crosswise.

This method, steel experts will tell you, cannot be improved upon in making automobile springs.

## Cross-Rolled Chrome-Vanadium

"Not a
Bump In
One of Them"



"Built for Life-Long Endurance"

Don't be satisfied with ordinary springs, when you can get springs of such enduring quality as these.

Springs which shield the engine from shock and vibration, springs which make

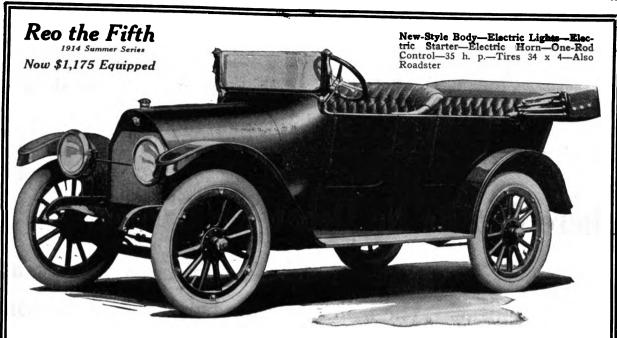
the car last longer, springs which reduce the upkeep in a way you can trace.

Leading makers are using these springs by the thousands. You can learn all about them, if you write for our booklets and full information. Why not today?

Best Grade — Chrome-Vanadium Next Best — Special Analysis



The Cleveland - Canton Spring Co.
Canton, Ohio, U. S. A.



# All We Can Ever Give

A chassis designed by R. E. Olds, as his final model—as the best he knew—after 25 years of car building.

A car built slowly, in a costly way, as though each car were built for Mr. Olds' own use. A body of the coming type—a streamline body, believed in Europe to mark the limit in automobile beauty.

Equipment which includes, we think, all that motorists desire.

A price \$220 less than last year now offering a value which, in all probability, no factory ever can excel.

Thus Reo the Fifth of this year fulfills all our ambitions—even all our dreams—after 27 years in this industry.

## Now the Last Step--\$220 Saved

Reo the Fifth came out three years ago. Since then, the sole attention of our experts and designers has been given to its perfection.

We have kept test cars running on the road, up to 10,000 miles per car. These cars are then taken apart and inspected. And every betterment which use suggested has been adopted in the chassis.

We have improved the finish and upholstery, the body design and equipment, until the whole car now measures up with the chassis. In none of these respects can we see any hope to do better.

Now comes the last step.

When we equipped this factory to build this car we made an enormous investment. Automatic machinery, testing machinery, everything necessary to build

well and build cheaply. Engineers have come from everywhere to inspect this model plant.

But we counted that investment final. Models thereafter were not to be changed. And we knew that sometime—when enormous output had repaid that investment—we could quote on this model a matchless price.

That time has come. This year we reduce our price 16 per cent. Last year's Reo the Fifth, completely equipped, sold for \$1,395. This year's price, with a better body and better equipment, is \$1,175.

#### Just as Costly

Yet the car is just as costly, save for lower prices on tires and electric starters.

It is still built of steel made to formula—steel analyzed twice.

All parts must still pass the same radical tests. All driving parts, as always, have 50 per cent. overcapacity.

There are 15 roller bearings, 190 drop forgings, a double-heated carburetor. Each car is built slowly and carefully. There are grindings and re-grindings, countless tests and inspections. And test cars are still run for thousands of miles to show up any possible weakness.

Each is built to run for years and years as well as it runs when new. To eliminate troubles, to minimize cost of upkeep. Many thousands of users now can tell you what such precautions mean.

#### Now Beautiful

And now the car is as handsome as a car can be. With a beautiful streamline body, deep upholstery, fine finish. With electric starter and electric lights of the best type made. With integral windshield, with all modern equipment.

And with our exclusive onerod control. No levers in the way of the driver. Gears shifted as easily as moving a spark lever —by moving a rod three inches.

Men who buy their cars to keep want a car like this. They want this finality, this stauchness, this up-to-dateness. And they want, above all, an honest car, built in this careful, costly way. So many want it that our orders at times run five times our factory output.

We have dealers in a thousand towns. Name of nearest sent with catalog on request.

## REO MOTOR CAR COMPANY, Lansing, Michigan

Canadian Factory, St. Catharines, Ont. Canadian Price, \$1,575

(230

## There Can Be No Debate on Oil

The best oil is the one that deposits the least carbon while properly lubricating the motor.

## There Can Be No Debate on Carbon

Take two oils of the same thickness. Look at them. The lighter in color has less carbon than the darker in color.

Take two oils of the same thickness and the same color. Pour a few drops of one into the other. The heavier gravity oil will sink because it has more carbon. The lighter gravity oil is better because it has less carbon.

# There Can Be No Debate on INVADER OIL

Pour a few drops of any other automobile cylinder oil of the same thickness and color as **INVADER** into **INVADER** OIL and it will sink because **INVADER** OIL is freer from carbon and is thereby of lighter gravity.

# There Can Be No Debate On Facts

You cannot argue about the weight of a ton of coal ---you can weigh it. You cannot argue about the difference in carbon between **invade** and all other oils---you can look at them and you can pour them together. That is the answer.

Others may talk in general terms about the "scientific" preparation of their oils. Meanwhile look at INVADER and other oils and pour them together. You will learn which is the best beyond all doubt and if the efficiency and life of your engine means anything to you, cease filling it with befouling carbon and feed it with cleanest, clearest INVADER OIL.



## INVADER OIL COMPANY, Inc.

essees of Charles F. Kellom & Co.

Main Office: 81 Broad St., New York

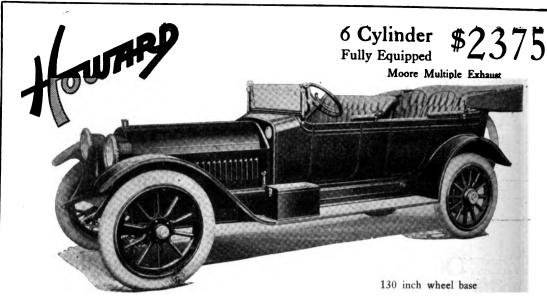
Philadelphia Branch: 113 Arch St.

Middle Western Distributors and Branch Warehouses:

## THE BECKLEY RALSTON COMPANY, CHICAGO, ILL.

TERRITORIAL	AGENTS:
New Orleans, La	Electric Appliance Company
Les Angeles, Cal	W. D. Newert Eudber Co.
Sen Francisco, Cal	W. D. Neweri Kubber Co.
Omaha, Neb	Lininger Implement Co.
Detroit, Mich.	Beyer-Campbell Co.
Saline, Kan	Lee Hardware Co.
Minnespelle Minn	Kachlench Warehouse Co.

1	TERRITORIAL AGENTS:
Portland, Me	James Bailey Company
None Vonk City	
Boston, Mass	George Collins, 284 Columbus Ave.
Honolulu, T. H	Hoffschlaeger Co., Ltd.
1	XPORT SALES AGENTS:
Chinman III	



## There is a great similarity between men and motor cars

#### Here's the man-side

Each possesses characteristics that make them fit or unfit for service.

When you set out to find a man to work for you, you don't hire the most flashily dressed man you meet; neither do you hire the fellow who talks the most.

You look rather to what that man has to offer you for the money you plan to lay down for his salary.

If you choose such a man, because of his good appearance and then find nothing to back it up: what do you do? And if you are impressed by his conversation and discover that his entire brain is in his mouth; chances are ten to one you stop his pay check.

4 Cylinder





114 inch wheel base

#### Dealers!

Don't be satisfied with merely reading this announcement. Write today and ask us to tell you just wherein the value of the Lexington-Howard organization lies. We will show you very quickly that there are a great many reasons why you should sell the Lexington "Four" and the Howard "Six" in your city.

#### Here's the car-side

Many a car has found favor through its paint job; in fact a good finishing department is the salvation of poor construction; for a time.

Many an advertising man has gained a dealer's confidence by his assumed sincerity in the product he was selling.

But as with men, motor cars must deserve such trust in order to hold the ground thus gained.

There is a law in human affairs that rewards the fit against the unfit; that sends the deserving up the success ladder with exactly the same speed as it tumbles the unworthy down.

Now the points behind all this is that you, as a motor car dealer must be very sure of your ground before you enter into a binding contract with anybody.

We want to put before you in very simple terms, the high character of the Lexington-Howard organization; its methods; its value to you. Then we want you to judge us, our sincerity, our responsibility; solely upon your own knowledge of human nature.

First of all the Lexington-Howard is an organization of specialists; men who have spent their lives in perfecting themselves in their individual lines. These men have proved their experience in profit paying plants before they entered ours.

We don't want you to take our word for this; we want you to make us prove it.

What you are most concerned with is our method of meaniscture and the provision we have made for our permanency in the automobile business. The Lexington-Howard plant has been most carefully and profitably departmentized.

Each part of the car represents a unit of manufacture; each self is working every day at a profit. The fact that we have made so liberal a provision for our dealers is only good business.

Unless you as a dealer receive the proper share of profits yos will not remain in business; and it is upon you and you also that our future as motor car manufacturers must rest. Then if you will sak as for our sales proposition you will receive another very pleasant surprise; because it's your interest that's at the bottom of this whole affair. We have laid our plans along lines that mean your success and ours; which, of course, means your profit and ours.

#### THE LEXINGTON-HOWARD COMPANY 126 Main Street, Connersville, Indiana

# end a septiment of the second of the second

Spit Fire Mosler Plugs **Maritalia** AT THIS PLUE HAS A GENUT PLATINUM POINT MINIMINITE STATE OF THE PARTY O MANUFACTURED

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FOR PROTECTION INJIJT UPON

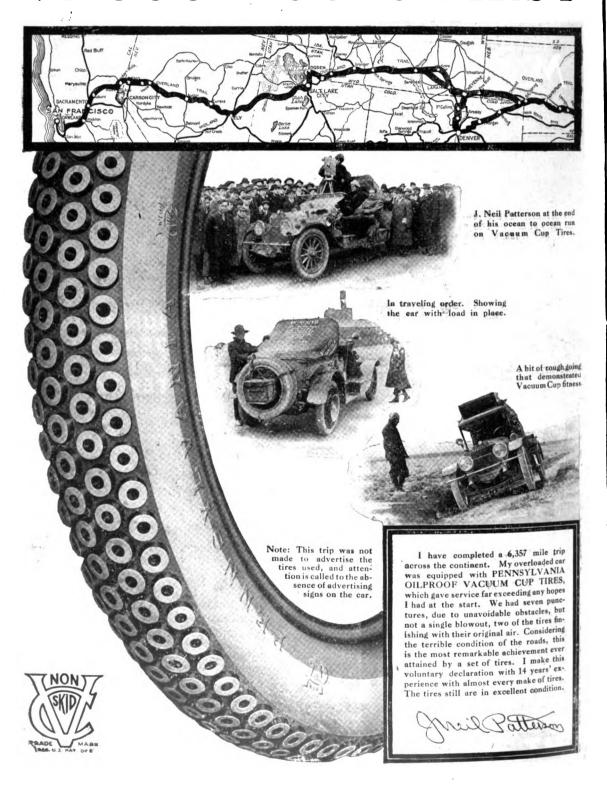
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Moslei esuviu Plug

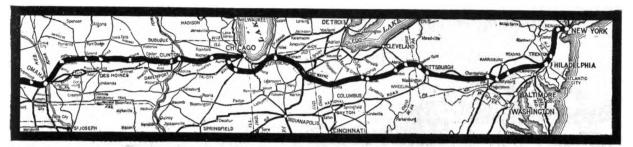
A·R·MOJLER & Cº P.O.BOX"M" MT. VERNON, N. Y.



# VACUUM CUPS FIRST



# Over the Lincoln Highway



In the remarkable tire experience of J. Neil Patterson of Detroit, the first automobilist to cover the complete route of the Lincoln Highway since its dedication, is again demonstrated the remarkable service capacity of

# PENNSYLVANIA Oilproof VACUUM CUPTIRES

This trip—begun at San Diego and completed two months later in New York City, with an actual speedometer reading of 6,357 miles—was accomplished on a single set of Oilproof Vacuum Cup Tires. It is a triumph of splendid tire fitness over almost every adverse condition known to the motorist.

Notasingle blowout occurred during the trip—despite the fact that the total weight of the car when loaded was 5,580 pounds—an overload of 580 pounds—and roads that varied from the needle shales of the upper Rockies to the half frozen clays encountered in a two-day blizzard just east of Denver.

Only seven punctures were taken in the five thousand miles, and each of these was traced to a nail or other metal object picked up in passing through the streets of towns.

New York City was reached with the original air—taken in at Los Angeles—still in two of the tires. And the wear upon the vacuum cups had been so little that these non-skid devices performed their function perfectly on the wet asphalt pavements of New York.

While this particular experience is recorded as a timely exposition of the sturdiness and upstanding wear resistance of Vacuum Cup Tires, and as a test whose conditions were carefully and continuously noted, it is by no means a Vacuum Cup performance of an extraordinary or exceptional nature. Every Vacuum Cup Tire is guaranteed for 4,500 miles. Thousands are in use today whose mileage has far exceeded this mark, and records of 12,000 to 15,000 miles on heavy cars are numerous.

It is because of this actual service—so often and so completely demonstrated as actual, not merely theoretical—that the most insistent and determined tire demand today is for Vacuum Cup Tires.

In a careful and practical preliminary survey of the 1914 dealer requirements there is already indicated a complete taking up of our trebled production for 1914.

Therefore, your orders at this time will not only assist us in giving you service but will be of great advantage to yourself in forestalling late deliveries.

Mr. Patterson's choice of Vacuum Cup Tires was influenced solely by their exceptional service on his previous tour in Mexico. He purchased the tires from regular stock in the Detroit branch.

### Pennsylvania Rubber Company

Pittsburgh, 505 Liberty Avenue Cleveland, 1921 Euclid Avenue Detroit, 254 Jefferson Avenue Chicago, 1004 Michigan Avenue Minneapolis, 12 South 8th Street Kansas City, Mo., 514 E. 15th Street

Omaha, 215 South 20th Street Seattle, Armour Building St. Paul, 149 West 6th Street

PENNSYLVANIA RUBBER COMPANY OF NEW YORK

New York City, 1889 Broadway

Boston, 735 Boylston Street Atlanta, 25 Houston Street Dallas, 2111 Commerce Street

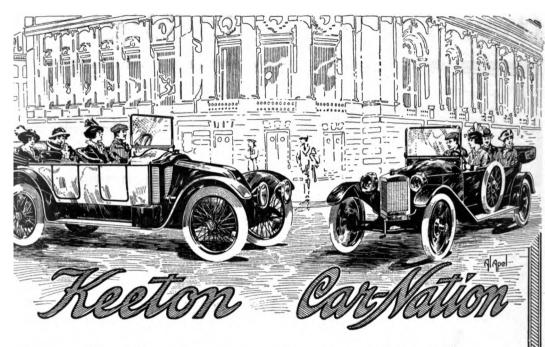
Jeannette, Pa.

PENNSYLVANIA RUBBER COMPANY OF CALIFORNIA

San Francisco, 160 Second Street

Los Angeles, 930 South Main Street

An Independent Company with an independent selling policy



# Each the Leader in It's Class

### "A Distinctive French Type"

The new Keeton Six is the only large high grade car that has been brought out in the last few years that is "different."

The general run of American built cars resemble one another very closely and a casual glance will hardly distinguish one make from another.

The Keeton Six has that distinctive French Type of construction that attracts your attention immediately.

Not only are the lines of the Keeton pleasing to the eye but the mechanical excellence of the working parts insures a maximum of use and endurance.

The quiet, powerful six cylinder motor—four speed transmission—improved cooling system—imported annular bearings and alloy steels throughout—wire wheels—long wheelbase—in fact the whole chassis represents the best in design, material and workmanship.

The price of \$3250 includes equipment that makes the Keeton complete in every detail.

#### "The Car for the Nation"

The Car-Nation is a high grade well designed, carefully built automobile with a four cylinder motor—sliding gear transmission—floating rear axle—in fact all the features are standard.

In addition to all the features of construction and detail that are embodied in big high priced cars—it has a "smart" appearance that sets it apart from the rest

sets it apart from the rest.

The V-shaped radiator—stream line body—wire wheels, full fenders and aprons—comfortable seating capacity and many other details all combine to make the Car-Nation the leader in the small car class.

For general utility and economy it is unsurpassed—25 miles to the gallon of gasoline—exceptional tire mileage—easy to handle—fast and powerful the Car-Nation is a splendid little car for all around use.

Dealers will write today about their territory.

Roadster, \$495. Touring Car, \$520. With Standard Equipment.

Write for "The Triple Test" Booklet

# The American Voiturette Company Detroit, U. S. A.

Digitized by Google

~ Pocket Watch

Mmm......Automobile
Timepiece

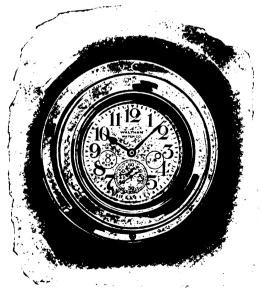
Let these lines represent the daily life of the house clock, the pocket watch, and the automobile timepiece.

The house clock is stationary and free of vibrations. The pocket watch is subject only to the vibrations of bodily motion. But the timepiece attached to an automobile is never free of vibrations, frequently of the most violent nature, except when the car is actually standing still.

Such a timepiece, to be trustworthy under all conditions, must be constructed especially for automobiles. No form of "automobile clock" which is merely a house clock differently cased and named, can be relied upon to withstand the excessive vibrations of motor car travel or exposure to extremes of temperature and weather.

Waltham Automobile Timepieces are the first which have ever been manufactured exclusively for motor-cars. They are not adaptations, but scientific instruments. designed and constructed, from the bottom up, to go into a motor-car. They thus harmonize with the fittings of the finest car and possess an immense strength and a resistance to temperature and weather changes which are absolutely unique. Traditional "Waltham" accuracy is theirs.

Leading manufacturers of automobiles, leading dealers, and the most discriminating owners find it equally to their advantage to adopt the Waltham.



# Waltham Automobile Timepieces

Waltham Watch Company, Waltham, Mass.



To spin a "frozen" engine it is first necessary to "break it loose." That requires a maximum or stalling torque far exceeding the torque at the normal speed.

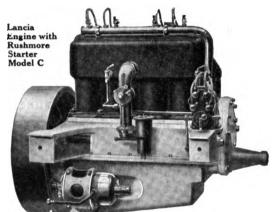
What determines the stalling torque?

Other things being equal, the current flowing.

What determines the current?

The ohmic resistance of the motor.

In a word, the lower the resistance, the



greater will be the current and the stalling torque. The greater also will be the efficiency at normal speed if the design is right. (It is possible for a motor of low internal resistance to be very inefficient despite that fact.)

### The PUSHMORE STARTER Model C

takes a stalling current of 580 amperes, and exerts then a torque of 328 inch-pounds. With a 134 inch pinion this represents a force of 375 lbs. at the flywheel rim.

In a test on a six cylinder engine of 5 x 7 inches bore and stroke, after standing outdoors all night in the snow, with the thermometer well below freezing, a Rushmore Starter took 360 amperes for an instant to break the engine loose, and pulled 250 amperes steadily after getting started. The momentary torque was about 238 inch pounds; the steady torque was 144 inch pounds. Speed was about 70 r. p. m. The first few turns warmed up the engine by the heat of compression, and after a couple of explosions the engine started easily.

The Model C Starter is not intended for engines quite so large as that, for we recommend a spinning speed not less than 100 r. p. m. But the fact that it

can exert a torque 38 per cent. greater than was required in the above severe test shows its great reserve power.

Rushmore Starters are built in sizes for engines up to 6 cylinders 6½ x 8 inches. They spin any engine from 50 to 150 per cent. faster than any other starter using equal current, and save the car manufacture \$25 or more per car.

The Rushmore Starting and Lighting System is factory equipment on the following cars:

SIMPLEX MERCER LANCIA
ALCO STAFFORD KLINE
KNOX REGAL CRANE

The Rushmore Starting and Lighting System is regular equipment in America on:

Mercodes, DeDien-Bouton, Isotta-Fraschini, Austrian
Delaunay-Belleville.

RUSHMORE DYNAMO WORKS Plainfield, N.J.

Don't let your plans—social or business—depend upon the weather.

With Collins Always-Ready Curtains you can come and go as you please—in your car—regardless of outside conditions. At the first sign of rain—Snap! Snap!—right in place slide Collins Curtains—and you're as snug as a "bug in a rug."

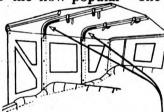
# Collins Always Ready Curtains

To get at Collins Curtains, you don't have to chase everybody off the rear seat—put on overalls and explore the cellar until you find some dusty crumpled-up curtains. They are always in plain sight, neatly rolled—not folded, and you can put them into service in in the dark.

There is no cable or other operating mechanism on the Collins Curtains to interfere with the lowering or raising of the now popular "one-man-top."

If you are buying a new car, the manufacturer or dealer will put on Collins Curtains for you, if you specify them. To make your present car up-to-date any top builder can apply them for you at a moderate charge. The Collins attachment is adjustable to any top and to your old curtains.

The Automobile manufacturers who provide for the convenience of the buyer, have Collins Curtains as regular equipment.



They are now regular equipment on the Cadillac, Chalmers, Moline, Paterson, Winton, Stearns-Knight, Haynes, Cole, Pullman, Havers, Herreshoff, Jeffery, National, Lyons-Atlas, Apperson, Moon, Velie, Davis, Speedwell, Jackson, Pratt, Palmer, Stanley, McFarlan, Henderson, Kline, Lexington and Pope-Hartford.

We license top manufacturers to furnish Collins Always-Ready equipment with new tops or to equip old tops.

To Ford Owners: We can furnish Collins Always-Ready Curtains for Ford cars.

There are some imitations and evasions of the Collins patents, which in some respects resemble Collins Curtains, but they do not have Collins advantages. Always look for the exclusive Collins curved bracket bar and the Collins license tag.

You can examine Collins Curtains at any of the display rooms of the cars having them



as regular equipment. We urge that you see them as soon as possible. Write us, and we will make the necessary arrangements. This obligates you in no way.

Novelty Leather Works Dept. D

Jackson, Michigan

# **CIRCULATION**

# THAT SELLS ALL PRODUCTS OF THE AUTOMOBILE INDUSTRY

## JANUARY FACTS

THE AUTOMOBILE—total	•	•	•	•	•	•	95,493
MOTOR AGE—total	•	•	•	•	٠	•	117,929
MOTOR WORLD—total	•	•	•	•	•	•	42,400
MOTOR PRINT—total (monthly) Published at 418 Sansom St., Philadelphia	•	•	•	•	•	•	44,759
							300,581

This circulation represents no waste. Covers automobiledom. Gets the story direct to the big power that purchases.

For rates, closing dates, etc., address

# THE CLASS JOURNAL CO.

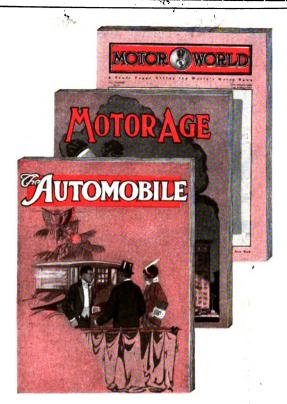
239 West 39th Street

New York

# SOLD

## 6000 CARS IN 60 DAYS

That tremendous merchandising success was scored by the Thos. B. Jeffery Company during November and December, 1913. It is doubtful if that great record was ever approached by another manufacturer of high quality cars.



#### THEREFORE THESE FACTS ARE IMPORTANT

In the issues of October 30th, 1913, of THE AUTOMOBILE, MOTOR AGE and MOTOR WORLD, the Jeffery company ran a splendid six-page advertisement in which was set forth the big story of its new 1914 products. During the period of time above mentioned it has scored this tremendous success—6000 cars in 60 days.

These publications were selected because of their recognized worth, and because the subscriber clientele of these three journals can absorb the entire product of the Jeffery company—can absorb the product of your company.

If you saw the February seventh issue of the Saturday Evening Post you may have noticed a half page advertisement of the Jeffery company where, after declaring its big merchandising success, at stated as follows:

"...That means more than success. These men know. They visit the various motor car plants. They read the trade journals," etc., etc.

It is not claimed that these three publications were entirely responsible for this big Jeffery success, but their influence throughout motordom (motorists, prospective motorists and dealers) was tremendous—and in the right direction.

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# M A Y O R NA D I A T O R S



EVENTS have proven that mor courag and ability ar required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY New Haven, Connecticut



# The Distinctive Car for the Discriminating Buyer

THOUSANDS of Regal owners the country over will tell you that the exclusive Regal construction makes Regal cars the last word in safety, stability, comfort and economy.

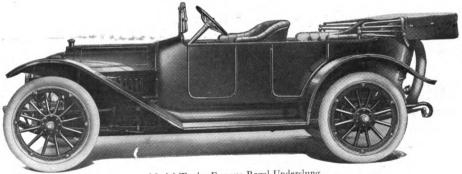
Compare the Regal in these respects with cars at a higher price, if you will. But—here's the real test—compare the Regal with other cars at about the same price.

1914 bids fair to be far and away the biggest year in Regal history.

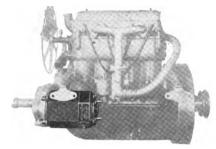
For the Regal is—and will be this year more than ever—the easiest bridge between the dealer who wants a satisfied trade and the buyer who wants a satisfying car.

On exhibition at the Boston Automobile Show.

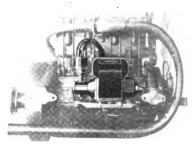
## REGAL MOTOR CAR COMPANY, 125 Piquette Ave., Detroit, Michigan



Model T, the Famous Regal Underslung 5-passenger touring car, electrically started and lighted Completely equipped. Price \$1,125 f. o. b. Detroit



Illustrating both sides of a "Four" on which the Complete Auto-Lite System -Starting, Lighting and Ignition — is standard equipment.



# A Steady, Logical Development

YEARS of concentration by the same staff on the one problem have produced the present Electric Auto-Lite system of starting, lighting and ignition for motor cars. It is not a side line. It is not an over-night inspiration. It is a development in which every condition of service has been considered, met and mastered.

We were among the first to enter the electric starting and lighting field—and were the originators of the now standard 6-volt system. Today over 20,000 cars on the road are Auto-Lite equipped and giving perfect satisfaction. Ten well known automobile manufacturers are now providing their entire outputs with the Auto-Lite system—and the list is growing.

You would not accept a car that is not electrically started and lighted. Why be satisfied with starting and lighting that is doubtfuluntried? Why, especially, when you can get a car that is equipped with the reliable, efficient Auto-Lite system?

Buy the car that is Auto-Lite equipped. It pays.

The Auto-Lite electric lighting system can be installed on individual cars. Write us about it. The Auto-Lite starting motor—like all other starting motors—can only be applied at the factory, while the car is being made.

## The Electric Auto-Lite Company

Home Office and Factory: Toledo, Ohio

New York

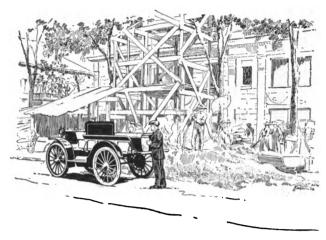
Detroit

BRANCHES Kansas City

Get This Book

Our "Hand Book on Automobile Electric Systems" with chart is in its second edition. The first edition went like wildfire. It is a broad, complete, practical hand book and trouble chart that enables to the complete of the c you to find and correct the trouble in any electric starting and lighting system. Send us your name and address with 10 cents in stamps. The book will be mailed you immediately.

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#### Sell the Most Successful Truck

PLAIN unadorned facts as to design, construction, service, and records, are responsible for the popularity that has made the International Motor Truck the most used truck in the world. The

### International Motor Truck

has a rated capacity of one-half ton. It is unequalled for quick delivering and light hauling. That is why it has an almost endless field of possible buyers—that is why it is being successfully used in over 100 lines of business.

Average business men in small towns and large, and farmers, save and make money with the International Motor Truck. Read our catalogues and learn the reasons for this. Study points like the following: the various styles of body—solid rubber no-blowout tires—ample road clearance—simple engine—ease of operation, etc.

Let us show you how to increase the motor truck business of your community. This is a money making opportunity. Why not write us today?

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# **Enduring Quality Proven**

The persistent, constant and strenuous stresses of race track speed prove the superiority of New Departure Ball Bearings.

Thirty-nine winnings, twenty-six seconds and eleven thirds, over a total of twenty-eight other motor cars, including foreign racing models, is the story of the New Departure equipped Mason Car the past season.

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Bristol, Connecticut

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Touring Car to a Closed Car
without the use of
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E want every int ness—the dealer without the nec Magnetos and Plugs.

There is good profit and quick sales for every dealer w and Plugs back up every claim made for them---they si but for many days to come. Legitimate profits with min

Let's get together---we have a new 1914 price schedul We want to get in touch with all the progressive firms value forget it.

Over 150 Bosch Service Stations are now o

#### **BOSCH MAGNETO COMPANY, 22**

Chicago

**Detroit** 



Dealer Selling-Helps on No-Shammy Funnels

# March is a Good Month for That Window-Display

WE furnish you complete descriptive instructions for dressing your window to demon-

strate the No-Shammy Funnel. The public is beginning to appear on the streets in search of the "new things" in motordom.

A guaranty that ALL carburetor troubles due to inefficient (impure) gasoline can really be eliminated, at nominal cost, will surely result in more than passing interest. A No-Shammy Funnel will do it, and you can actually show the customer how it is done.

With an incentive of 50% profit, your volume of sales for the season should easily run into three figures. In preparation for this sure demand, see that a generous supply of No-Shammy Funnels are on hand.

The No-Shammy Products Co.
O. C. FOSTER, Sales Director
Hippodrome Bldg., Cleveland, Ohio



Operation of the No-Shammy Funnel

NO-Snammy Funnel
JOUR the gasoline into the
Jarge pocket. The water
and dirt contained therein, being heavier than gasoline, whi
sink to the bottom. The pure
gasoline will rise and pass over
through the gauge near the top
of flow uncertain separation or
of flow uncertain separation or
or endinary seven is used. Subrisatical sheet-steel construction,
heavily copper-plated to prescription
correction, nakes it for sequent
to that of the ordinary funnel.
Permanent wine-gauge.

Three Sizes: Garage, Auto and Motorcycle





Of course we could make more Kelly-Springfield Tires and Tubes. Rembrandt and Rubens could have painted more pictures, too. But they wouldn't have been such good pictures. prefer to make fewer than most makers and to be glad to have made every one.

## Kelly-Springfield Tire Company

Corner Broadway and 57th Street, N. Y.

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detroit, Cincinnati, San Francisco, Los Angeles, Cleve-land, Baltimore, Seattle, Atlanta, Akron, O.

The Hearn Tire & Rubber Co., Columbus, O. Todd Rubber Co., New Haloss Rubber Co., Denver, Colo.

Atkinson Tire & Supply Co.

Boss Rubber Co., Denver, Colo.
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A quiet, luxurious hostelry in the midst of New York's rush and gayety. Near the theatres in the evening, and a pivotal point from which to transact your business during the day.

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Model T Runabout - - \$500 Model T Touring Car - 550 Model T Town Car -- 750

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\$1,275

OHIO MODEL, \$1,275 MOTOR-Four-cylinder, 41/4 x 4¾. AXLE — Floating on Roller

Bearings.
TRANSMISSION — Three speeds ahead and reverse. CLUTCH—Multiple disc. CONTROL—Center. SPEEDOMETER-Stewart. EEDOMETER—See 14 x 4.

RES—34 x 4.

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ECTRIC STARTER,

IGHTS and HORN.

MS—Demountable.

ROYAL MODEL, \$1,985 MOTOR—Six-cylinder, 4 x 6. AXLE—Full floating on annular bearings.
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CONTROL — Center and left hand drive. SPEEDOMETER — Warner, fush.
TIRES—35 x 4½ and 36 x 4.
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ELECTRIC STARTER,
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RIMS—Demountable.

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FACTORY: THE CRESCENT MOTOR CO. W. T. HUNTER, Pres.

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It Doesn't Matter what brand of ignition your automobile is equipped with-SPLITDORF SER-VICE is AT YOUR COMMAND. The whole SPLITDORF organization is YOUR FRIEND -we want EVERY user of a hydro-carbon engine to be OUR FRIEND. We'll leave no stone unturned to bind the friendship with TRUE SERVICE.

Call upon our nearest Branch Manager if you have ignition troubles—he'll advise and help you without delay. He's there for the purposeyou can depend upon him treating you right.

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HERE is no method yet discovered of ascertaining the pressure in the inside of a tire, except by the use of a pressure gauge. A casing containing 40 pounds of air looks and feels exactly like a casing containing 80 pounds. If your tires require 80 pounds and you only give them 40, they're on the quick road to the scrap-heap.

USE A

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You were glad to see Uncle Sam build the Panama Canal!
Ever expect to use it personally?
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But YOU CONTRIBUTED to it!
You gave up a little over \$5 for it on your own account, and a similar amount for your wife and each of your children and for each person dependent on you.
You may not know it, but that's the proportion of your Government tax that went to Panama.
The Lincoln Highway, running from the Atlantic to the Pacific, is another magnificent American achievement now in the making.
You don't HAVE TO contribute as you did to the Panama Canal, because the Government is not going to tax you for it.
It's voluntary!
We want you to join in this work of your own free will.
We want you to contribute an even \$5 (or more) for yourself—nothing for the wife or children.
It will come back to you fast enough in the rapid making for the wife were the courter.

It will come back to you fast enough in the rapid making of good roads all over the country. Just drop a line today to

The Lincoln Highway Association Detroit, Michigan

# Hyatt Roller Bearings



Lead the world in quantity of production. Twelve mammoth factory buildings required to supply the demand.

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Hyatt Roller Bearing Company Detroit, Michigan





Multibestos is made of the finest asbestos firmly inter-woven with brass wire. It has the greatest efficiency and durability.

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Remover \$10

Will remove ALL carbox from cylinders. Easily and in few minutes. Equal of any high-priced outfit. All parts gase-anteed. Keeps up efficiency of cars and trucks. BIG MONEY MAKER for garages. Price \$10

(Without Oxygen Tank) Usual price \$15. As we sell for cash only and so account carried, customers are given as companies allow inspection—you cash with order or C. O. D.

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If you have a Ford car in your garage, you have a neat profit awaiting you.

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The fit is guaranteed and you can count on high-grade workmanship and immediate delivery.

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Estimates Cheerfully Furnished

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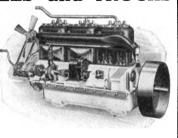
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The car that started the stampede to standardization

A Cole franchise is a valuable asset to any dealer. Find out about it.



Cole Motor Car Co. of Indianapolis



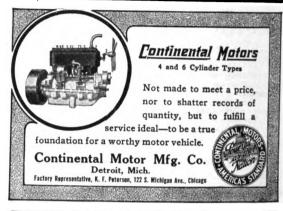
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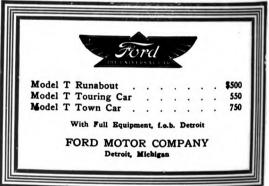


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"32" Touring car, fully equipped
house two-unit electric generator and starter; electric lights; oversize tires, 33 x 4 inches, demountable rims, extra
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All prices F. O. B. Detroit

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Save time, money and make extra profit doing your own welding. Outfit complete and simple; repairs worn and broken parts good as new. Welds iron, steel, brass, bronze and aluminum. Safe and sure. Quick repair work. Includes oxygen carbon remover feature. Double work, double profits. Pays for itself in short time. Complete instructions furnished.



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assures perfect synchronization at all speeds; eliminating preignition and overheating-starts easily with a quarter turn of the crank and frequently without cranking by means of the starting button on the coil. It will, in addition, wonderfully increase the power, speed, flexibility and hill-climbing ability of the Ford car and is easily installed without any necessary machine work.

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Completely Equipped

New Series Model 31, 110 Inch Wheel Base

A larger, more beautiful car, with every luxury and equipment. Increased production brings the price down to \$900.

Advance catalogue with complete details is ready

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The new KisselKar 48 "Six" at \$2350, with the big 60 "Six" at \$3150, give the KisselKar real leadership in the "Six" field. Strikingly handsome cars of unusual comfort. Extra liberal wheelbase—roomy tonneaus—powerful, flexible motor—big wheels and tires. Fully equipped flexible motor—big wheels and tires. Fully equipped—electric lighted and started—left hand drive, center control.

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This name on Automobile Tires and Rubber Accessories signifies inherent qualities of material and workmanship that insure the maximum of service at the minimum of expense.

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### Triplex Engine Starter For Ford Cars

Mechanical, durable, simple and efficient. 100 per cent. uninterrupted service from the time it is attached.

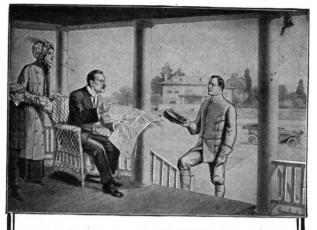
Write for particulars regarding dealer arrangements.

UNIVERSAL MANUFACTURING CO. RACINE, WIS.



Car-buyers are looking for the above trade mark on the springs of the cars they're inspecting. Also for the cups that indicate the Self-Lubricating Device—patents pending. Write for booklet with complete information, including the two-year guarantee and the forty-eight separate process

Detroit Steel Products Co., 2258 East Grand Boulevard, Detroit, Mich



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"I know you are a careful driver, but it is best to adopt every device to prevent accidents.

"I can't afford to take any chances. We have all foolishly depended on rubber alone long enough. It's time to awake to our responsibility. So go at once and buy a complete equipment of Weed Chains and never start out without them when the roads or pavements are slippery or greasy."

# Weed Anti-Skid Chains

Insure Against Anxious Moments



Probably no other device has done so much to raise the factor of automobile safety as WEED CHAINS. They are the proverbial "ounce of prevention" against skidding, the cause of over ninety per cent of all automobile accidents—Life Insurance and Accident Insurance Companies strongly endorse them and recommend their use. Taxical Companies, for their

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### **Increasing Demand**

for WEED CHAINS makes them the **most profitable** Automobile Accessory handled by Dealers—Quick and Steady Sales—No Dull Seasons—No Dead Stock—Easily Handled—Liberal Profits—Universal Satisfaction.

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At all dealers selling Auto Supplies

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Manufactured for Canada by Dominion Chain Company, Limited; Main Office, Suite 801 Shaughnessy Bidg., Montreal, Canada





the birthplace of motor vehicles produced the Zenith Carburetor—for six years the unchanging standard of the best know makes abroad. For speed, for pleasure, for profit—in every field of motor activity—this scientific device is used by 150 famous motor cars of Europe.



The American Market is Developing Fast well known as leaders in their various fields, have adopted the American Zenith after widespread comparison. They appreciate its many peculiar advantages, its positive simplicity, its great flexibility for any motor speeds, its freedom from numerous adjustments. They hail, in its absence of valves and springs and weights and moving parts, the coming of the fool-proof carburetor which, once set, is adjusted as long as their product lives.

Why You Should Raverey's principle of "the compound nozzle" made possible the Zenith. It is called the greatest step forward in carburetion since Krebs' early device. You should know more about the Zenith—what it will do for your product—what it will mean to your customers. A request will bring you facts. A thorough test will prove them.



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E NERGETIC business man desires sole agency for Sweden, of progressole agency for Sweden, or progressive American motor car manufacturing firm; also well known rubber goods manufacturing house. Low priced, well known make is preferred. For further negotiations please apply (if possible in Swedish), to "RESPECTABLE," care S. Gumaelii Annonsbyra, Stockholm,

A NEW YORK corporation with large selling force, having display room on ground floor, would like to handle New York agency for automobile accessories. Must be first class in every respect. Box No. 272, care Motor World.

FORD OWNERS — Purdy exhaust horn for Fords is being used everywhere—positively will not clog or choke. Write today for catalogue. Dealers, ask for prices. PURDY BROS. CO., 47 E. 55th St., Chicago, Ill.

TOP DEPT. OR FACTORY SUPT. Man with nine years' experience as head of top department and factory, desires similar position. Best credentials furnished. Box 273, care Motor World.

WANTED—An active, experienced and resourceful Motor Truck Factory Sales Manager. State experience, age, and salary wanted. Address Box 271, Motor World.

PEERLESS EXTRA FINE BLACK
JAPAN.
Air drying with a high gloss finish on all metal parts of automobiles. One coat covers solid requiring no primer or undercoat. THE COLUMBUS VARNISH CO., Columbus, Ohio.

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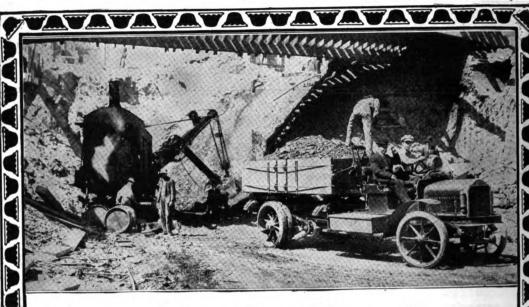
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# GOODRICH WIRELESS TRUCK TIRES

Although this is a gruelling test for the tires, they are standing the "grind" and have already delivered over 6000 miles. The contractor is getting the "Continuous Service" for which Goodrich Wireless Tires have become the Standard.

What Goodrich Wireless Tires are doing for Mr. Blass, they will do for you

The B. F. Goodrich Company

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# BOSS OF THE ROAD A NEW PACKARD-THE "4-48"

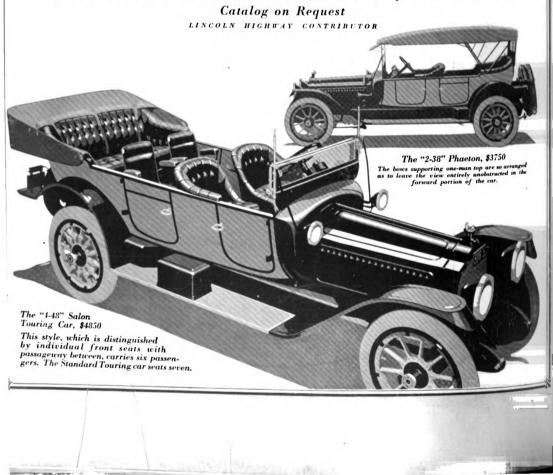
This latest Six is the larger consort of the Packard "2-38." The "4-48" has all the refinement and luxury of the "2-38," plus a bigger margin of reserve power. Twenty styles of bodies, open and enclosed.

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Standard equipment of the Packard "4-48" includes Packard one-man top, Packard windshield, Packard-Bijur electric lighting and starting system, Packard control board, speedometer and clock, power pump for inflating tires.

## PACKARD MOTOR CAR CO., DETROIT





A Trade Paper Giving the World's Motor New

Vol. XXXVIII No. 11

New York, March 5, 1914

Ten cents a co

# Leading European and American Makers Use Berry Bros.' Raven Black Finishes and Japans

UROPE now joins with leading American makers in recognizing the superior qualities of Berry Brothers' Black Finishes and Japans.

Careful automobile manufacturers realize that appearance counts for a lot today in a motor car. Even the hoods, tool boxes, lamps, fenders and other exposed metal parts must be given careful attention—for they are subjected often to close examination by the motor car buyer.

Berry Brothers' Raven Japans are noted for their durability and toughness. They beautify and protect exposed parts of automobiles with a finish that is good looking—and LASTINGLY good looking.

To the automobile manufacturer, the body builder, the accessory maker, Berry

Brothers' Raven Japans point the way—with an enviable record for successful service. They indicate a way for im-

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proving the outward appearance of the car. They lend an atmosphere of class and tone that every salesman considers an asset in the selling of a motor car.

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It will pay you to investigate Berry Brothers' Raven Japans. The facilities of our

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be glad to help you choose the finish best adapted to your needs, and to show you how to obtain the best results. Write today for further information.



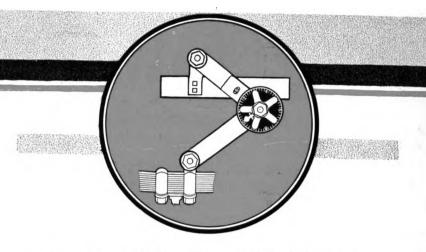
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THE most luxurious upholstery cannot protect passengers from the discomfort of being thrown about by excessive oscillations of uncontrolled springs.

Twenty-five of America's leading car manufacturers recognize the selling need of the

# Truffault-Hartford SHOCK ABSORBER

"The Pioneer and the Best"

It absolutely annuls all spring vibrations caused by rough roads insuring the utmost possible comfort over surfaces of every kind. At the same time it greatly reduces both operating and maintenance expense by the protection which its use affords to engine, running gear and tires.

The selling advantage of this equipment is apparent to all far-sighted dealers. If Truffault-Hartfords are not supplied on the car you handle it's to your best interest to know why.

Four models ranging in price from \$16 to \$60 per set of four. Write for further particulars.

# HARTFORD SUSPENSION CO.

E. V. HARTFORD, Pres. Office and Works: 142 Bay St., Jersey City, N. J. Manufacturers of Hartford Electric Starting and Lighting System

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LNDIANAPOLIS—425 No. Capitol Bivd.

# of what use is a brake?

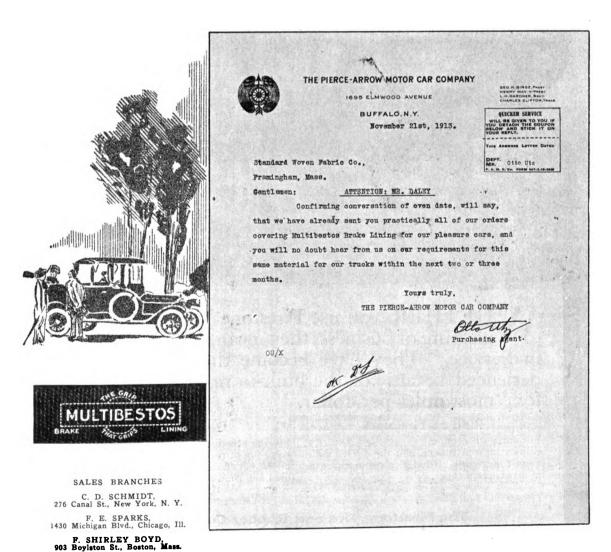
N. A. PETRY CO., INC., 1427 Vine St., Philadelphia, Pa. FRED WARD & SON. INC., Cor. First and Howard Sts., San Francisco, Cal.

What does a driver depend on to a greater extent than his brakes? Is there any part of the car which is really so important?

Bear in mind too that no brake is efficient unless its brake lining is firm, strong and reliable.

Brakes lined with Multibestos are a guarantee of safety in any car. Repeated tests have proved that Multibestos gives greater service than any other brake lining. In fact, it is as a result of competitive tests that it has been adopted as standard equipment on so many of the leading cars.

Take the Pierce-Arrow for instance-









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The Pyrene Extinguisher is convenient in size, has the maximum of efficiency, is easily operated, presents a handsome appearance, and Pyrene brass and nickel-plated extinguishers are the only types that qualify to

plated extinguishers are the only types that qualify to pay part of your insurance.

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# 50,000 a Year vs. 1500 a Year

ANY foreign producer who gets his annual automobile production up to 1500 cars a year thinks he has manufacturing economy down to a fine science.

We can turn out that many cars in a week!

For 1914 we will build 50,000 Overlands—the world's largest production on this type of car.

Our manufacturing cost must decrease as our production increases.

How can those manufacturers, who make but 1500 cars a year, meet our prices?

They cannot.

Yet there are scores of American manufacturers whose annual output does not exceed 1500 cars a year.

Keep these cold facts in mind when buying and you can save yourself considerable money.

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# The Willys-Overland Company, Toledo, Ohio

Manufacturers of the famous Overland Delivery Wagons, Garford and Willys-Utility Trucks. Full information on request.

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Electric head, side, tail and dash lights Storage battery

35 Horsepower motor 33 x 4 Q. D. tires 114-inch wheelbase

Stewart speedometer Mohair top, curtains and boot Clear-vision windshield Electric horn \$1075

With electric starter and generalm f. o. b. Toledo

# MOTORWORLD

Vol. XXXVIII

New York, U. S. A., Thursday, March 5, 1914

No. 11

## BRISCOE FORMS COMPANY TO BUILD HIS \$295 CAR

Argo Motor, with \$750,000 Capital, to Produce 10,000 Cars First Year—Factory to be Located Near New York.

Speculation with regard to the production of Benjamin Briscoe's light car, which appeared simultaneously in France with the larger car that already has been put upon the market, was set at rest last week by the incorporation of the Argo Motor Co, New York, which, it transpires, was formed for the specific purpose of building and marketing the car. Although the larger car is being built by the Lewis Spring & Axle Co., Jackson, Mich., that company is to have nothing to do with the production of the light car.

Benjamin Briscoe is president of the new company, which has been incorporated under Delaware laws with \$750,-000 capital, and associated with him are L. E. Latta, who is vice-president and general sales manager, and F. D. Dorman, formerly secretary of the U. S. Motor Co. and the Maxwell Motor Co., who is secretary-treasurer. The general office of the company is located at 7 East 42d street, as heretofore, though it has not yet been decided where the factory will be located. It is practically assured, however, that it will be located within the metropolitan area and close to New York.

Although as originally intended the car is to be produced simultaneously in America and in Briscoe's Billancourt (Paris) factory, there will be an important difference in the construction of the two cars. Thus, though the car produced for the French market will have friction transmission mechanism, as originally produced, the American car is to have a cone clutch, shaft drive, sliding gearset and bevel drive. Otherwise, however, the

two cars will be practically the same. The American car will be sold for \$295 equipped.

Both cars will have 15-horsepower, 4-cylinder, water-cooled motors and the bodies will seat two passengers side by side. The wheelbase is to be 90 inches and the tread will be slightly narrower than the standard gauge. It is planned to produce 10,000 cars in the American factory during the first year and twice that number during the second year. Contracts for half of the initial production now are being placed, and it is expected that deliveries will be commenced about May 1st.

#### Gerber Assumes Abbott Presidency.

Following the acquisition of the Abbott Motor Co., Detroit, Mich., and all of its property by E. F. Gerber, Pittsburgh, and his associates, which deal was consummated last November, Gerber has been elected president of the company. The other officers are Francis B. Fick, secretary and treasurer, and Morahn J. Hammers, vice-president. The factory is being enlarged and an increased output is planned.

#### Lewis Axle Man Forms Irwin Truck.

Headed by Murray Irwin. sales manager of the Lewis Spring & Axle Co., Jackson, Mich., the Irwin Motor Truck Co. has been incorporated with \$500,000 capital, to manufacture the Irwin truck; the factory is to be located in Marshall, Mich., but the type of the vehicle has not been made public. The Lewis company has no interest in the Irwin company.

#### Brandes to Survey Foreign Tire Field.

C. O. Brandes, manager of the export department of the Firestone Tire & Rubber Co., will sail from New York this week for an extensive tour of Europe. He will visit the Firestone company's agents and generally make a comprehensive survey of the foreign automobile and tire business.

## PULLEN AND DE PALMA TAKE AMERICAN ROAD CLASSICS

For First Time, American Driver and American Car Capture Coveted Grand Prize—De Palma "Repeats" in Vanderbilt.

#### GRAND PRIZE.

Driver and car.	Time.
Ed. Pullen, Mercer	5:13:30
Guy Ball, Marmon	5:53:23
Wm. Taylor, Alco	6:08:29
Ralph De Palma, Mercedes	6:09:08
H. L. Gordon, Mercer	Flagged

#### VANDERBILT CUP.

Ralph De Palma, Mercedes3:53:41
Barney Oldfield, Mercer3:55:01
Wm. Carlson, Mason4:02:39
Earle Cooper, Stutz4:04:03
Geo. Georimann, Touraine. Flagged

They were both glorious races—races calculated to quicken the blood; and they were gloriously fast. But even though no world's records were broken there remains double reason for rejoicing. For did not "Smiling Ralph" De Palma double his grip on the Vanderbilt Cup? But what is far more important, the running of the Automobile Club of America's fifth International Grand Prize race marks the first time in the history of that classic that an American driver at the wheel of an American car has whirled in in front of the field.

Pullen—"Ed" to those who know him well enough—is the man who did it and he did it with a Mercer car. Pullen drove those 403 miles on Saturday last at a rate that made the old Santa Monica course fairly sizzle. He went through in 5:13:30, which is at the rate of 77.2 miles an hour, and is just 2.75 miles an hour better than David L. Bruce-Brown turned the trick at Savannah in 1911.

De Palma's time in the Vanderbilt, (Continued on page 23.)

## PALMER-SINGER UNABLE TO RESIST FINANCIAL STRAIN

Refinancing Fails and President Appeals to Bankruptcy Court— Singer, Who Lost \$1,000,000, Aims to Start Anew.

Efforts at a successful reorganization of the Palmer & Singer Mfg. Co., Long Island City, N. Y., having proved futile, the company was placed in the hands of a receiver in bankruptcy this week, Tdesday, 3rd inst. One of the three petitioners was Charles A. Singer, Sr., the president of the company, who is said to have sunk \$1,000,000 in the business since his first connection with it.

Singer, who holds the largest portion of the company's \$1,000,000 of stock, is reentering the automobile industry with another and perhaps similar car, but those close to the company's affairs state that the present move will likely lead to the winding up of the present Palmer & Singer industry. His new car, it is stated, will be known as the Singer car.

The exact causes of the embarrassment are not made plain, but it has been known for several months that the company had been endeavoring to extricate itself from a trying financial situation; in fact, late last August Charles A. Singer, Sr., who was president, and Clyde D. Knapp, who was first vicepresident, exchanged places. It was said at that time that Knapp represented certain Standard Oil interests which controlled the Motor & Gear Improvement Co.; the latter had American rights to the Magic motor and it was accepted by the trade that when Knapp had assumed charge the company would bring out a car incorporating the Magic engine.

The Magic experiment is said to have proved costly and, while no comment was advanced by the corporation, Singer resumed his old position January 1 last and Knapp retired. A Magic-equipped car was exhibited at the New York automobile show, but apparently few, if any, reached the market. There are said to have been other causes contributing to the embarrassment.

The company has outstanding \$190,000 in gold notes; these are in two blocks, one of \$100,000 and the other of \$90,000, and one is due in 1915 and the other in 1917. The paper is such that the defaulting of the interest on any portion makes the whole due; the interest of February 1 was not met by the company, and the

appeal to the bankruptcy court was made, it is said, because Singer was unwilling to make further investment. He is connected with the Singer Sewing Machine Co. and personally has ample resources.

The petition, which was filed in the Federal court in Brooklyn, was signed by Singer, his wife, Caroline H. Singer, and Alex Gilliland, Pittsburgh, Pa. While the three state that they have unmatured claims aggregating \$60,400, all that they name in the petition are: Gilliland, gold note, \$5,000; Singer, demand note, \$645, open account, \$11.99; Mrs. Singer, demand note, \$5,825, open account \$10; total, \$11,491.99.

In the last four months they charge that the company has made several small preferential payments, the total being about \$600. It is alleged that there are others of which the petitioners have no knowledge. The car, they state, is a good and well-known car, the company is possessed of much good-will and has assets which require conservation. They estimate the assets at \$395,000, as follows: Inventory, \$250,000; plant equipment, \$132,000; cash and bills receivable, \$5,000; deposits with manufacturers, \$8,000. The plant itself is leased, not owned.

John J. Kuhn, a member of a Brooklyn law firm, was named receiver and was required to give a bond of \$10,000; he is authorized to operate the plant under further order of the court, and if an adjudication in bankruptcy follows he is to continue as receiver.

#### J. H. Ford Joins Silent Majority.

John Howard Ford, a director of the United States Rubber Co. and president of the Meyer Rubber Co., died at the Hotel Plaza, New York, on Monday night, 2nd inst. Ford was one of the best known men in the rubber industry in New York and, in addition to being connected with the United States and Meyer companies, was a director of the New York Mutual Gas Light Co. and a trustee of the American Surety Co. of New York.

#### Ford Assembling Plant in Pittsburgh.

The Ford Motor Co., Detroit, Mich., has purchased a site in Pittsburgh, Pa., and plans to erect one of a series of assembling plants which it is building in various parts of the countrty; while dispatches from Pittsburgh state that the plant and site will cost \$1.000,000 and that 1,000 men will be employed, the Ford company states that the figures are a trifle high, at least so far as the number of employes is concerned.

## BRISCOE GETS ASSEMBLING PLANT FOR HIS "BIG" CAR

Leases Ames-Dean Factory in Jackson—Trade Veterans Form Company to Make His Radiators and Sheet Metal Parts.

Two strides of considerable length in the development of the business of the new Briscoe Motor Co. were taken last week when this company secured in Jackson. Mich., a plant for the assembling of its cars and the Jackson Metal Products Co. made its initial bow to the industry as the future manufacturer of fenders and radiators for the Briscoe light car; this company, too, will locate in Jackson, although the organization has not yet progressed to the point where a site for the factory has been selected.

As is already well known, the chassis will be built in the plant of the Lewis Spring & Axle Co., Jackson, but further assembling must be done elsewhere: wherefore what is known as the Ames-Dean factory on Wildwood avenue has been leased for that purpose; this structure is 600 feet long, 200 feet wide and three stories in height, and is close to the main line of the Michigan Central Railroad, over which parts made outside of Jackson may be imported with facility.

While the Ames-Dean plant is at the opposite side of the town from the Lewis factory, no inconvenience is anticipated; the chassis will leave the Lewis factory for a road test, the end of which will be at the Ames-Dean factory. Also, a parement recently has been laid on Wildwood avenue, which in itself is no small advantage.

The Jackson Metal Products Co. is backed by John Stern and L. M. La Duke, the former of whom will be president and the latter vice-president and manager; these two, with Benjamin Briscoe, were principals in the Briscoe Mfg. Co., Detroit, a radiator maker and are therefore not inexperienced in their new venture. La Duke is said to have built with his own hands the first radiator ever manufactured in Michigan, used on an old curved-dash Oldsmobile runabout.

Aside from fenders and radiators, the company plans to build other sheet metal parts for the Briscoe car and will likewise make a bid for business from other car manufacturers. It is estimated that a factory with 75,000 feet of floor space will be required.

# GABRIEL CLAIMS HARTFORD MADE UNFAIR STATEMENTS

Snubber Manufacturer Asks Court to Hold Truffault - Hartford Maker in Contempt—Trouble Two Years Old.

Patent litigation between the Hartford Suspension Co., Jersey City, N. J., and the Gabriel Horn Mfg. Co., Cleveland, O., has after two years of friction reached a point where the Gabriel company has entered the United States District Court in New York City with a petition that E. V. Hartford be adjudged in contempt of court; it is charged that in his zeal to prosecute the Gabriel company he disobeyed a decree issued by the court in 1912 in an infringement suit brought against the Foster Shock absorber. The matter has been referred to a master who will take testimony.

The trouble harks back to May, 1912, when the Hartford Suspension Co. sued Hoyt & DeMallie, New York City, on the charge that they were handling the Foster shock absorber; this was somewhat similar to the Truffault-Hartford and had been made by the Gabriel company, but some time before the suit began its manufacture had been discontinued and the Gabriel snubber placed on the market. Hoyt & DeMallie sold five Foster devices all told, and because the device had been discontinued the defendants consented that a decree be taken against them.

This decree, however, was accompanied by a court order to the effect that the Hartford company should not, in advertising or otherwise, make the claim that this had been a victory over the Gabriel Horn Mfg. Co. and, in fact, that so far as the matter was concerned, the name of the Gabriel company be left out entirely.

The 1912 suit was based on Hartford's patent, reissue No. 12,437, but December 9, 1913, he took out patent No. 1,080,630 and shortly thereafter filed a suit in the United States District Court in Buffalo against Ralph E. Brown, trading as the Ralph E. Brown Motor Car Co., charging that Brown infringed this latest patent by handling Gabriel rebound snubbers.

It is claimed by the Gabriel company that Hartford in this suit alleged that the Gabriel company had been stopped from making the Foster device, that it then modified it and brought out the snubber and that the snubber was an infringement; the newspapers printed this, and this is construed by the Gabriel people as advertising the Foster suit in a man-

ner contrary to the court's decree in 1912.

Plan to Sell Assets of Walpole Rubber.

Unless the opposing element in the receivership and reorganization of the Walpole Tire & Rubber Co., Walpole, Mass., is successful, the assets of the company are quite likely to be ordered sold by the Federal court; an order for the sale will be asked late next week. That objections will be forthcoming, however, is stated by one faction in the reorganization. At a hearing last week, Judge Robert O. Harris, one of the receivers, asked that \$60,000 be set aside with which to pay a 4 per cent. dividend to unsecured creditors. He was opposed, however, by Martin G. Metzler, who maintained that no dividends should be paid until interests represented by him have had the opportunity of bringing about a reorganization of the business. The court, however, ordered the payment of the dividend. The company was placed in the hands of a receiver August 2, following the failure in April of the Atlantic National Bank, Providence, R. I., which failure caused embarrassment for the Walpole company. The company's assets considerably exceeded its liabilities, and receivers were appointed to protect the business.

#### Ajax Denies Rubber Man's Charge.

Demanding \$3,153.28, Charles Engel this week filed suit in the Supreme Court for New York county against the Ajax-Grieb Rubber Co., charging that the latter had failed to carry out the terms of a contract to buy a certain amount of crude rubber from the now bankrupt New York Commercial Co., a rubber importer; Engel is an assignee of the contract. The Ajax-Grieb company makes answer with the statement that the quantity of rubber involved was not delivered on time, that it had to go into the open market and buy rubber, that when the rubber was tendered for delivery it had no use for it, and therefore refused to accept it. It states that it took nearly all of the 78 tons of rubber covered by the contract and lived up to the contract even though a drop in the price of rubber cost it \$60,000.

#### Knight Back from Trip to Tropics.

Charles Y. Knight, the inventor of the sleeve-valve engine that bears his name, has returned to New York after a month in the tropics. He will remain in the metropolis for about two weeks before sailing for his home in Coventry.

# BARBER CHALLENGES BUICK WITH MOTOR VALVE PATENT

Claims Removable Construction Infringes His Invention and Brings Action Against Dealer—May Sue Other Builders.

Having achieved a measure of success in spark plug litigation, William Barber, a Brooklyn inventor, stepped again into the limelight this week with a valve patent. No. 781,802, granted February 7, 1905. While it is stated that he may file other suits, he has aimed his first one at the Buick Motor Co., and in an action filed this week in the United States District Court in New York City names as defendant George B. Foster, the Buick dealer in Yonkers.

Barbers' patent claims to cover a removable valve, of which the four-cylinder cars involved in the present suit have eight, all of the overhead type; the point at issue, however, is their removability and not their overhead position.

He charges that Foster has sold a number of Buicks incorporating this construction, and he estimates his damages at \$800; the small amount asked is not indicative of the size of the suit, because should Barber be successful he doubtless would make a much larger claim.

The claims of his patent state that it covers "In an explosion motor, the combination with an explosion chamber having an inlet orifice provided at one side with means for connecting the same with an explosive vapor supply pipe, a normally closed inlet valve located in such inlet orifice, and a removable plug secured in the bushing so as to close the outer end thereof and secure the valve in position in such a manner that the valve may be removed without disturbance of the bushing upon removal of the plug."

Barber's spark plug patent is No. 732,-032, granted June 30, 1903, and in October he brought suits against the Red Head, V-Ray and Sootless plugs; shortly thereafter the Emil Grossman Mfg. Co. bought a one-fifth interest in the invention and secured the dismissal of the infringement charge against the Red Head plug.

British Representation for Imp Cyclecar.

H. G. & F. G. Sharpe, Carrolton House, London, Eng., have taken the British agency for the Imp cyclecar. The life of the contract is for 10 years and it calls for 1.000 Imps a year.



# HERRESHOFF'S CREDITORS' DISPUTE BRINGS RECEIVER

Charge Lycoming Company with Favoring Itself While Managing Business for Creditors—Committee Seeks Proxies.

Cleaming that the Lycoming Foundry & Machine Co., Williamsport, Pa., acted in bad faith as creditors' manager of the embarrassed Herreshoff Motor Co., Detroit, Mich., and favored itself to the detriment of the other creditors, the latter this week filed a petition in bankruptcy against the Herreshoff company in the Federal court in Detroit; a receiver has been appointed and the creditors have designated a committee which will endeavor to secure the designation of the Security Trust Co., Detroit, as trustee. The members of the committee are: H. W. Patton, Detroit Body Co.; J. H. French, Michigan Stamping Co., and J. L. Dryden, Long Mfg. Co.

The events which have culminated in the present action are explained in a statement by the committee accompanying its request for a power of attorney from creditors. It says:

"In the fall of 1913, the Herreshoff Motor Co. found itself in financial difficulties, and called together a number of its larger creditors and asked an extension of time. The situation was canvassed, and it was decided to grant such extension provided the creditors could be represented on the board of directors and provided, further, that the Lycoming Foundry & Machine Co., which had built the engines for the Herreshoff Motor Co., would send a representative to Detroit to stay on the job and see that proper motors were secured and installed in the cars to be shipped after that date.

"In furtherance of this proposition, notes were sent out which were accepted by most of the creditors; particularly, the larger criditors accepted the notes on the understanding that no interest was to be paid to anyone. The concern continued since under the management of the Lycoming company's representative and instead of conditions becoming better, they became worse."

It is further claimed that the Lycoming company has been taking interest on its account and has also applied upwards of \$6,000 upon its claim, while the rest have received nothing. It is also said that the Lycoming company failed to furnish the proper character and class of motors, and the loss sustained by the

Herreshoff company by reason of the rejection of its cars on this account is pointed out as being the real reason for the concern's financial difficulties. Just what merit there is to these contentions will be decided by the courts within a short time.

Although the Lycoming company is in the majority as regards amount of claims, the creditors' committee explains that, in numbers, if the other creditors get together they will control the majority, which will result in the election of and appointment by the court of one or the other of the trust companies in Detroit, or some other third person as trustee, so that the creditors can have the benefit of an investigation of these alleged conditions.

#### Mais Truck Meets Last Obligation.

The Mais Motor Truck Co., which was reorganized after having been placed in the hands of a receiver July 9, 1912, last week met and paid its last obligation to Franklin Vonnegut, the receiver, and now is actively preparing for a substantial increase in output. The officers of the new organization are: H. G. Francis, of the Charles E. Francis Co., Rushville, Ind.; W. M. Pearce, of the Innis-Pearce Co. and the Park Furniture Co., Rushville, vice-president; A. S. Lockard, secretary and treasurer; L. A. Caswell, superintendent; J. S. Sinclair, purchasing agent.

General Motors to List More Stock. The General Motors Co. has applied for permission to list additional voting trust certificates representing \$714,000 common stock, and preferred, issued since the last application in 1911, amounting to \$583,000. In addition, it applies for permission to list, from time to time, \$3,374,200 common stock now in the treasury and \$3,369,000 preferred stock now in the treasury, on notice from the company that the stock has been disposed of, making the total applied for \$4,088,200 common and \$3,619,900 preferred.

New Orleans Gets Cyclecar Factory. For the purpose of building a cyclecar to sell for \$375, the New Orleans Cyclecar Co., Ltd., has been organized, and the following officers elected: Julius C. Weiner, president; I. T. Rhea, vice-president; W. S. Campbell, secretary and manager. The car will have a twincylinder, air-cooled motor, 96-inch wheelbase, 42-inch tread and carry two passengers. The company will locate in

the Louisiana city from which it derives

# \$2,240,000 CARS EXPORTED TO AMERICAN POSSESSIONS

Island America Increases its Purchases in 1913 by \$19,000—Hawaii Largest Buyer—Philippines Greatest Gainer.

The non-contiguous American possessions—Hawaii, Porto Rico, the Philippines and Alaska—during the year 1913 bought 62 more American-made cars than in 1912 and spent \$18,991 more with American manufacturers; this is an increase of 4 per cent. in number and less than 1 per cent. in value. The parts purchased of American factories during the same period cost \$4,000 less than was paid for this commodity in 1912, a loss of about 1½ per cent.

The Philippines made a considerable gain in its buying of American automobiles; their purchases advanced 204 cars, with an added cost of \$127,197, and \$21.590 more was paid for parts. Alaska took 12 more cars and increased its expenditure \$18,991; for parts, however, it paid \$103 less. Hawaii and Porto Rico lost. During the month of December the cars sold were 24 less in number.

Tire exports are given for Hawaii and Porto Rico only. They were: Hawaii, 1912, \$305,165; 1913, \$372,865; gain, \$07.700, or 22 per cent. December, 1912, \$15.620; December, 1913, \$39,592; gain, \$23.972, or 153 per cent. Porto Rico, 1912, \$208,193; 1913, \$307,179; gain, \$98,986, or 47 per cent. December, 1912, \$19,416; December, 1913, \$23,005; gain, \$3,589, or 18 per cent. The details follow:

	Twe	lve Months 912	Ending December 1913		
**	No.	Values.	No.	Values.	
Hawaii— Cars	636	\$1,024,238		\$1,006,937	
Parts* Porto Rico—	• • • •	86,331	••••		
Cars	409	562,081	294	365,391 82,872	
Parts*	• • • •	114,316	• • • •		
Philippines— Cars	475	616,761	679	843,958	
Parts*		53,070		74,660	
Alaska Cars	15	19,664	27	25,449	
Parts		4,034	• • • • •	3,931	
Total cars	1,535	\$2,222,744		\$2,241,735 253,751	
Total parts*		257,751	• • • •	233,731	
Total cars and parts*	1,535	\$2,480,495 ——Decem	ber	\$2,495,486	
		12	19	Values.	
Hawaii	No.	Values.	No.	•	
Cars	75	\$130,208	48	\$63,595 9,441	
Parts*		14,591	• • • •	9,441	
Porto Rico Cars	40	44,486	27	29,615	
Parts*		4,844		4,670	
Philippines— Cars	38	45,277	54	53,785	
Parts*		1,877		9,229	
Alaska					
Cars Parts*		28		96	
Total cars	153	\$219,971	129	\$146,995	
Total parts		21,340	••••	23,436	
Total cars and parts Does not inc	153 lude e	\$241,311 ngines and	129 tires.	\$170,431	

# The Week's INCORPORATIONS

Menominee, Mich. — Dougas Motor Car Co., under Michigan laws; authorized capital, \$10,000.

Detroit, Mich.—Abbott Motor Car Co., under Michigan laws; authorized capital, \$150,000. Corporators—E. F. Gerber, Pittsburgh, and others.

Xenia, O.—Hawkins Cycle Car Co., under Ohio laws; authorized capital, \$50,000. Corporators—P. E. Hawkins, George Little and T. H. Zell.

Fayette, Mo.—Fayette Garage Co., under Missouri laws; authorized capital, \$15,000; to install repairing equipment. Corporators—D. B. Denny and others.

Columbus, O.—Automobile Equipment Co., under Ohio laws; authorized capital, \$100,000. Corporators—George W. Platt, Arno Meekel and Edward H. Maffey.

Detroit, Mich.—LaVigne Cyclecar Co., under Michigan laws; authorized capital, \$470,000. Corporators—Joseph P. LaVigne, Frank A. Witt and James H. App.

Columbus, O.—Columbus Automobile Trade Association, under Ohio laws; authorized capital, \$1,000. Corporators—F. E. Avery, J. P. Gordon and A. B. Coates.

Boston, Mass.—Columbia Rubber Co., under Massachusetts laws; authorized capital, \$50,000. Corporators—Patrick H. Crowley, William F. Crowley and Hugh G. Cameron.

Boston, Mass.—Mattapan Motor Car Co., under Massachusetts laws; authorized capital, \$30,000. Corporators—Francis T. Meagher, Katherine A. Meagher and Edward R. Meagher.

Ft. Wayne, Ind.—Ten Broeck Tire & Rubber Co., under Indiana laws; authorized capital, \$10,000; to handle tires and rubber goods. Corporators—J. F. Storch, H. L. Lewman and H. P. Lewman.

Bridgeport, Conn.—American Cyclecar Co., under Connecticut laws; authorized capital, \$300,000. Corporators—Isaac B. Trumbull, Alexander H. Trumbull and Frank S. Trumbull, all of Bridgeport.

Wallingford, Conn.—Wallingford Auto Co., under Connecticut laws; authorized capital, \$2,500. Corporators—Everett C. French, Frank W. Bottume and Marilla C. Bottume, all of Wallingford.

Indianapolis, Ind.—Indiana Auto Racing Association, under Indiana laws; authorized capital, \$10,000; to operate races of automobiles, airships, etc. Corporators—Frank Blair, Charles Feeser, Jr., Frank S. Feeser and Benjamin F. Royse.

Ford, Ont.—Beeson Non-Skid Tire Band Co., Ltd., under Canadian laws; authorized capital, \$40,000; to manufacture automobile accessories. Corporators—Bert J. Beeson, Walkerville, and others.

Granville, Ill.—Excelsior Garage Co., under Illinois laws; authorized capital, \$2,500; to deal in automobiles, parts and accessories. Corporators—Rysell P. Cotie, Lewis H. Triplett and Harry H. Cassabaum.

New Orleans, La.—New Orleans Cycle Car Co., under Louisiana laws; authorized capital, \$17,500; to manufacture motor driven vehicles. Corporators—Julius C. Werner, Isaac T. Rhea and William S. Campbell.

Springfield, Ill.—Owen-Schoeneck Co., under Illinois laws; authorized capital, \$10,000; to manufacture and sell automobiles, accessories, etc. Corporators—John L. Owen, William F. Gleason and Oreb Crissey.

Terre Haute, Ind.—Union Sales Association, under Indiana laws; authorized capital, \$5,000; to deal in automobiles, accessories and engines. Corporators—George C. Buntin, Jacob R. Finkelstein and Harry D. Hughes.

Buffalo, N. Y.—Gray-Line Taxi Co., under New York laws; authorized capital, \$10,000. Corporators—William I. Waters, 420 Main street; William H. Riehl, 156 W. Chippewa street; Sherman S. Jewett, D. S. Morgan building.

New York, N. Y.—Whitfield Starter Corporation, under New York laws; authorized capital, \$12,000; to manufacture electric starters. Corporators—Thomas M. Day & Co., George E. Foley & Co., Louis F. Mentz, all of 62 Cedar street.

Albany, N. Y.—L. & G. Motor Co., under New York laws; authorized capital, \$1,000; to conduct an automobile business. Corporators — Clarence M. Gardinier, Rensselaer; Walter C. Longleway, 431 Western avenue; Achille O. Van Suetendael, 101 Lancaster street.

New York, N. Y.—Cosmopolitan Automobile School, under New York laws; authorized capital, \$5,000. Corporators—Albert G. Armento, 105 East 63rd street; Robert J. Morris, 835 West 42d street; Bernard Wertheim, 246 Bradhurst avenue.

New York, N. Y.—J. A. Rietman Co., under New York laws; authorized capital, \$5,000; to deal in automobile bodies, etc. Corporators—John D. Dunlop, 254 Fourth avenue; J. A. Reitman, 449 West 23rd street; Q. M. Brooks, 149 Broadway.

Chicago, Ill.—Eagle Auto Transfer Co., under Illinois laws; authorized capital, \$15,000; to operate a garage, transfer and delivery business and deal in motor vehicles. Corporators—Samuel A. Miller, Elizabeth Gradley and Maurice Gevirtz.

New York, N. Y.—William Haussler, under New York laws; authorized capital, \$1,000; to conduct a general automobile repair business, etc. Corporators—Dorothy Haussler, William Haussler and Edward Haussler, all of 811 Eastern parkway, Brooklyn.

New York, N. Y.—A. L. Robertson Motor & Supply Co., under New York laws; authorized capital, \$32,000; to conduct a general motor vehicle business. Corporators—G. Earlyville Smith, Alexander Keogh and William W. Hoffman, all of 26 Liberty street.

New York, N. Y.—David Acetylene Gas Generator Co., under New York laws; authorized capital, \$10,000. Corporators—Louis Strinban and Dave Strinban, both of 36 Pike street; Henry Melzer, 80 Sheriff street.

New Orleans, La.—Modern Wheel Co., under Louisiana laws; authorized capital, \$35,000; to manufacture wheels for vehicles. Corporators—S. P. Walmsley, Arsene Perilliat, Clarence O. Sherrill, George Blardone and T. Semmes Walmsley.

Mahnomen, Minn.—Mahnomen Garage Co., under Minnesota laws; authorized capital, \$10,000; to buy, sell and deal in motor cars and trucks and conduct a general garage and repair shop. Corporators—Albert L. Thompson, Olaf Qually and George O. Lee, all of Mahnomen.

Buffalo, N. Y.—Ampere Control Corporation, under New York laws; authorized capital, \$100,000; to deal in control systems for automobiles, aeroplanes, etc. Corporators—Ernest W. Jones, 61 Highland avenue; Ralph E. Heard and L. C. Kinnius, both of 98 Erie Co. Bank Building.

San Francisco, Cal.—Hall-Scott Motor Car Co., under California laws; authorized capital, \$100,000; to manufacture, sell and deal in motors, engines and machinery. Corporators—B. C. Scott, E. J. Hall, G. W. Scott, L. S. Scott and H. A. Hall.

Indianapolis, Ind. — Automatic Gas Motor Co., under Indiana laws; authorized capital, \$200,000; to manufacture motor cars and accessories. Corporators —F. B. Whitlock, Harvey Bates, Jr., H. F. Campbell, C. W. Hackleman, E. E. Stafford and H. H. Fulton.

New York, N. Y.—Ohio Eastern Distributors Incorporated, under New York laws; authorized capital, \$2,000; to conduct an automobile business. Corporators—George S. Bradt, 255 Van Buren street; Norman R. Bradt, 617 Quincy street, Brooklyn; Chester A. Luff, 122 South 11th street, Newark, N. J.

#### Changes in Capitalization.

Cleveland, O.—National Garage Co., from \$20,000 to \$40,000.

Toledo, O.—McNaul Automobile Tire Co., from \$75,000 to \$175,000.

Milwaukee, Wis.—Milwaukee Cycle Supply & Sales Co., from \$30,000 to \$75,-

Philadelphia, Pa.—Eveland Engineering & Mfg. Co., from \$100,000 to \$2,000,000.

#### Recent Losses by Fire.

Manchester Center, N. Y.—Roberts & Roberts; garage destroyed. Loss, \$4,000.

Petrolea, Ont.—Petrolea Motor Co.; 40 cars and trucks destroyed. Loss not stated.

Davenport, Ia.—Totten Auto Co., 1708-10 3rd avenue; acetylene explosion; building damaged. Loss not stated.

Baltimore, Md.—Auto Sales & Service Co., 200-12 Trenton street; garage, one car and nine trucks damaged. Loss, \$60,000.

Des Moines, Ia.—Matthews Carriage & Auto Co., 212-14 East 3rd street; building and several cars damaged. Loss, \$25,000.

Detroit, Mich.—Woodward Taxicab Co., 973 Woodward avenue; cars damaged to extent of \$25,000; loss on building, \$1,000.

# REEVES ELECTED MANAGER OF CHAMBER OF COMMERCE

Miles Hereafter to Devote His Entire Time to National Show
Matters — Reports of the
Various Committees.

Alfred Reeves was elected general manager of the National Automobile Chamber of Commerce, to succeed Samuel A. Miles, at the regular meeting of the association, held at headquarters. New York, today (Thursday). Mr. Reeves assumes management at once. He is not new in the managerial end of motoring organizations as he was formerly manager of the Association of Licensed Automobile Manufacturers, and, previous to that, was general manager of the Association of Motor Car Manufacturers, the independent oranization which waged war against the Selden patent interests. When Mr. Reeves severed his connections, three years ago, he became sales manager of the United States Motors, and later was general manager of the Hartford Suspension Co., Jersey City, from which concern he has resigned as vice-president and general manager to take up his new duties.

Samuel A. Miles, who has resigned as general manager of the National Automobile Chamber of Commerce, will devote all of his time in the future to the New York and Chicago motor car shows, which up to the present have been taking all of his time from the first of September until the first of March, and during which period his general managerial work has often had to be set aside.

Miles is generally known as the dean of motor show managers in America, having staged 14 successive shows in Chicago, his first one being held in 1901. Previous to that time he had been engaged in bicycle shows, his first venture in this dating back to one in Chicago in 1885. His New York show experience has covered the past two years, when he has managed the Grand Central Palace shows.

Miles has had a long experience in connection with motor organizations. It was in the fall of 1902, when he was made general manager of the National Association of Automobile Manufacturers, which was organized the previous year. Since that time he served as general manager of this organization until its merger recently into the National Automobile Chamber of Commerce, at which time he was elected as its general manager, so that his work covers a

period of fourteen years as director of the National organizations.

Today's meeting received the report of S. A. Miles on behalf of the show committee covering the recent shows in New York and Chicago. The report showed both of these exhibitions to have been the most successful in the history of the automobile industry. The attendance at the New York show was approximately 10 per cent. in excess of that a year ago, when it was estimated there was an attendance for the week of 125,000. The Chicago attendance showed a greater increase than that of New York.

From the maker's point of view, the shows were better business-getters than any previous ones. There was a bigger attendance of dealers who placed larger orders for shipments, and the retail sales were in advance of previous years.

Good roads matters received attention through Roy D. Chapin of the Good Roads Committee, who told of the progress being made in the campaign for national aid for better roads, and also reported on the excellent progress being made toward the completion of the Lincoln Highway.

There has been so much legislation proposed in the various States some unfair and of a nature that would create hardship on the million or more users of automobiles, that the Chamber of Commerce members definitely decided on a declaration of policy to discourage by all proper means the enactment of any State or legislative jurisdiction in this country any legislation which falls within the following classes:

- 1. Bills which impose local license or registration fees or local regulations upon automobiles or their owners, or which give authority to minor jurisdictions to regulate the operation of automobiles; such license or registration fees and regulations being in addition to those imposed or fixed by State laws.
- 2. Discriminatory bills which impose burdens upon automobiles not borne correspondingly by horse-drawn vehicles.
- 3. Bills, the effect of which is to impose double taxation on automobile through the imposition of a person property tax in addition to the exaction of registration and license fees, or otherwise.
- 4. All acts imposing an occupation tax on either agents or manufacturers of automobiles or restricting or regulating the industry or the trade by special legislation.
- 5. All legislation requiring the use of specific or proprietary devices or attachments on automobiles in addition to manufacturers' standard equipment



# In Salesroom and Garage



The Western Motor Car Co., Los Angeles, Cal., which heretofore has handled Chalmers cars in Southern California, has been made distributer also in Northern California and Nevada; it also will distribute Saxon cars. The Pioneer Automobile Co., which has handled the Chalmers in the northern half of the State and Nevada, will retire temporarily from the retail trade and the president, E. P. Brinegar, will devote himself to his other interests; among other things, he is a stockholder in the Chalmers Motor Car Co., Detroit. The Western Motor Car Co. will take over the Pioneer location on Van Ness avenue, near Mc-Allister street. Calvin C. Eib. the vicepresident of the Pioneer company, plans to reengage in the trade as a dealer in another make of car.

Following the retirement of C. A. Lord from the trade, the Overland agency in Lincoln, Neb., has been taken over by the Lincoln Overland Co. The firm members are: Paul Herpolsheimer, of Seward, Neb.; O. B. Teckelberg, of Wahoo, in the same State, and R. E. Bicknell, G. W. Spiegel and E. D. King, of Lincoln. The company is located at 1333 P street, the former location of the Lord Auto Co.

The Bullock Machine & Supply Co., which has been a farm machinery jobber for 20 years in Norfolk, Neb., has entered the automobile trade with salesrooms in Omaha at 2520 Farnam street; the company has Nebraska agencies for Ohio cars, Bull tractors and Sanford trucks. E. A. Bullock is the principal in the concern.

The E. Stupecky Electric Co. has been organized in Manitowoc, Wis., by Edward Stupecky, formerly employed in the Case factory, Leonard Zielsdorf, formerly of Erie, Pa., and Edward Warren, of Manitowoc. The company has located at 1208 Washington street and will build, sell and repair all kinds of electrical equipment.

J. K. Dorn, of Miami, Fla., has sold his garage, on 11th street, to Edwin N. Belcher and R. P. Brown, both formerly connected with the Florida Title Co. Dorn retains his agencies for four cars and will be assisted in their sale by Belcher and Brown, both of whom will enter actively into their new business.

John A. Nichols, Jr., who formerly was stationed at the Franklin factory in Syracuse, N. Y., but who later has been a Franklin district manager in the Northwest, has entered the trade for himself; he has secured the Franklin agency in Spokane, Wash., and is trading as the Franklin-Nichols Co.

The Boyd Supply Co. has entered the trade in St. Louis, Mo., with offices in the Rialto building; it will sell tires and accessories. The firm is composed of Frank D. Boyd, former president of the Corliss Supply Co., and Francis Bryan, of the automobile department of W. H. Markham & Co.

The Call brothers have purchased the interest of H. S. Harpster in the Harpster-Baldwin-Call Co., Eighth. South and State streets, Salt Lake City. The company's garage will be remodeled and will be managed by L. Call. Rebuilding and selling used cars will be a feature of the business.

The Central Auto Co., Ltd., of Grand Rapids, Mich., has changed its name to Western Michigan Cadillac Co. Oscar Eckberg continues as manager and treasurer. The company is erecting a five-story reinforced contrete garage at 19-25 Lagrave avenue southwest.

George Elliott, formerly of Midland, Tex., and Frank J. Garrett, El Paso, have formed the Elliott-Garrett Co. and have opened salesrooms in El Paso, Tex., at 422 San Antonio street; they have the agencies for the Packard, National, Oakland and Studebaker.

The Thomas Motor Co., of Lima, O., has sold its garage and repair-shop to Dale Armentrout, formerly foreman of that part of the Thomas business; it is located at 233-35 South Main street. The Thomas company retains the agency for Cole cars.

Wliliam F. Wagner, of Massillon, O., who has operated a garage at Erie and North streets, is about to build a new structure, 50 x 150 feet, at 121-26 North Erie street; Wagner will convert his former garage into a market place with 20 stalls.

The Huston-Hanger Auto Sales Co. been formed in Washington, D. C., and will deal in used cars; the company has procured storage and salesrooms in 1119 Fourteenth street, N. W. W. J. Huston and J. Edward Hanger, Jr., are the principals.

M. F. Remelin having severed his connections with that concern, the Bumiller-Remelin Co., accessory jobber of Cincinnati, has become the Herman Bumiller Co. The business will be continued at the old location, 432 Main street.

C. J. Nichols, a top manufacturer in Syracuse, N. Y., has become a truck dealer; he has the Selden agency and has taken possession of the salesrooms on West Genesee street formerly occupied by the Genesee Motor Car Co.

George W. Hawkins, a pioneer dealer in Houston, Tex., but who has not been active in the trade for some time, has opened a supply store in that city; he has located in the Carter building, on Rusk avenue.

At a public sale the Elm Grove Motor Sales Co., of Wheeling, W. Va., was purchased by Zacharias Springer; the assets include several cars and the agency for them, a stock of accessories and fixtures.

Having purchased the Seven Corners Auto Co., located at 1502-4 3rd street south, Minneapolis, F. M. Artley has changed the name to South Side Auto Co. The company operates a garage and repair-shop.

The Browning Automobile Co., of 129 South State street, Salt Lake City, has taken the Overland agency which formerly was held by the Campbell Automobile Co. The latter recently went out of business.

A new garage, which will be operated by Frank Bowles, is being erected in Beaumont, Tex. It will stand on Liberty avenue, between Alamo and James streets, will be 100 feet square and will cost \$4,000.

Longstall & Meredith have entered the trade in Milwaukee at 329 4th street; they will deal in electrical equipment and will maintain a department for the repair of lamps, radiators and electric systems.

Carl W. Ford and J. M. Parrott have organized the Piedmont Auto Sales Co., Atlanta, Ga. They are Southern distributers of Reo and Marmon.



T. M. Barnhill has sold his interest in the Texas Motor Sales Co., of Corpus Christi, Tex., to his partner, F. D. Woods; Barnhill will devote himself to other interests, while Woods will continue the business alone.

The Hicks Automobile Painting Co. has entered the trade in Grand Rapids, Mich. It is a reorganization of the Grand Rapids Painting Co. and has located at 220-22 Division avenue north.

W. A. Lee, of New Orleans, formerly employed as a mechanic and electrical engineer, has taken over the Burns Repair Shop, at 819-21 Julia street; he will repair cars and motorcycles.

The Feist Garage Co., of Dunkirk, N. Y., of which Albert J. Feist is the head, has taken over the Frank Dopler Garage at 67 East Front street; the Dopler garage is fully equipped.

A. V. Schermerhorn, a lumber dealer in Ridgefarm, Ill., has entered the trade; he has taken the Ford agency and will make automobiles a feature of his business.

Peck & Linden, garage operators in Rifle, Col., have dissolved partnership; the business will be continued by S. H. Peck in the Dreamland Theater building.

John W. Radke, of Milwaukee, Wis., plans to build a two-story garage and undertaking establishment, 45 x 65 feet, at 44th street and Lisbon avenue.

J. S. Tonney, who has been employed as a repairman in Willows, Cal., has opened up for himself; he has a repairshop at 429 West Oak street.

Charles Parry, of Miami, Fla., is erecting a two-story garage, 30 x 18 feet, at 8th street and the Boulevard; it is of gray stone and concrete.

Ben E. Torkelson, of Springfield, Mass., has opened a repair-shop at 717 Main street; he also will maintain an automobile livery.

The Trimble & Johnson Co., of Moundsville, W. Va., plans to erect a repair- and machine-shop; T. S. Riggs is president.

W. R. Whitaker has purchased an interest in the City Garage, of Marble Falls, Tex. A new concrete garage will be built.

William Doty, of Mt. Carroll, Ia., has sold his garage business; he will return to railroad work in that town.

Anton Konda, of Porterville, Cal., has been granted authority to erect a garage; it will cost \$7,000.

William Evans, of Wellington, Ill., has opened salesrooms; he stocks Ford cars.

# PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That
Serve to Place Many Workers
in New Places—Few Leave
the Industry.

P. T. Talbott has been appointed manager of the Dallas (Tex.) branch of the Firestone Tire & Rubber Co. He succeeds J. F. Cast.

George F. Day has been made sales manager of the Kansas City branch of the Oakland Motor Car Co. He was formerly connected with the Hupp Motor Car Co.

W. S. Campbell has been appointed advertising manager of the Miller Rubber Co., of Akron, O. Formerly he was circulation manager of the Iron Trade Review and the Daily Iron Trade.

W. C. Alcorn, former factory manager of the Consolidated Mfg. Co., has been appointed manager of the Sheet Metal Stamping Department of the Transue & Williams Co., of Alliance, O.

Wallace C. Hood, formerly sales manager of the Chalmers Motor Co. and the Empire Automobile Co., has been appointed sales manager of the Standard Motor Truck Co., succeeding George D. Wilcox.

Frederick A. Curtis, until recently manager of the Knox branch in Chicago, has been made manager of the Knox Automobile Co.'s branch in New York City; he at one time was a salesman in the branch of which he is now manager.

D. McCall White, recently works manager of Crossley Motors, Ltd., Eng., and previously works manager and designer for D. Napier & Son, Ltd., and formerly with the Daimler Co., Ltd., has joined the engineering department of the Cadillac Motor Car Co., Detroit, Mich.

Fred Tucker, formerly with the Holt-Chandler Co., Maxwell distributer in the metropolitan district, and later with the Maxwell Motor Co., has been made manager of the New York branch of the Stromberg Motor Devices Co., 146 West 56th street; he succeeds Roger B. Whitman.

L. S. DeLand, for two years special factory representative of the Studebaker Corp. in Wisconsin, has been appointed general sales manager of the Wollagor Sales Co., of Milwaukee, State agent for the Studebaker. DeLand will be in charge of both wholesale and retail sales.

James W. Cain, who has been asso-

ciated with the McCord Mfg. Co., of Detroit, Mich., since its inception, for the past year as its chief engineer, has severed his connection with the company. He will enter the railway supply business and have headquarters at Houston, Tex. His duties are to be assumed by Howard Greer, Jr.

Joseph J. Martin will assume the duties of district sales manager for the Stewart Motor Corporation, of Buffalo, N. Y., with headquarters in Chicago. His territory extends from Ohio, on the East, to Colorado, on the West, and from Minnesota to Texas. Formerly he was special traveling representative for the Commerce Motor Car Co.

#### Minor Business Troubles.

Louis C. Howard, New York City, formerly a dealer but now a salesman, filed a petition in bankruptcy this week; his assets are nothing and his liabilities \$27,-177. It is his second time in bankruptcy. His principal creditors are: Motor Finance Co., \$5,000; Rainier Motor Car Co., \$5,000; Demarest Lloyd, \$3,652; other claims are \$1,500 and less.

A petition in bankruptcy has been filed in the Federal court in Chicago against the Automobile Construction Co. by the Racine Mfg. Co. The amount of the liabilities is not stated.

The S. P. Sjoberg Co., an automobile repairer, New York City, has filed schedules in its assignment for the benefit of creditors; the liabilities are \$12,607, the nominal assets \$12,584, and the actual assets \$5.540.

The Federal court in Chicago has been petitioned to hold Fredereick T. Laramie, president of the bankrupt National Automobile Co., in contempt; it is alleged by Frank M. McKey, receiver for the company, that Laramie has failed to obey the court's order that he give security for a car which he sold, the security to protect the receiver in case it proved that Laramie had no right to sell the car. The company was a National dealer. The court has promised to investigate.

#### International Now All Under One Roof.

With the object of concentrating its business under one roof, the International Motor Co., which formerly maintained its executive offices at Broadway and West 57th street, New York City. has moved them to its service building at West 64th street and West End avenue; the service building occupies about half a city block and is 6 stories in height, well lighted and of modern concrete construction.



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#### GET A LEGITIMATE PROFIT.

Every motor car dealer, repairman and garageman should make a legitimate profit out of every bit of work he does, otherwise his business will, in the majority of cases, prove a failure. This legitimate-profit factor should be the corner stone on which the business fabric of the dealer, the repairman and the garageman is reared.

You cannot afford to do business unless along profitable lines. If you follow non-profitable methods the receivership will sooner or later end your career in that particular field.

A little unprofitable act in itself is a very simple-looking affair—it is innocent looking. Sending out a repair car and pulling in some car or truck that got stuck in the mud, or on a hill, bears all the semblances of good business, when it is done for nothing. But where does it end? You do it for Mr. A, and you are in duty bound to do it for Mr. Z. Each in his own imagination is as worthy as the other. If you do it free for Mr. A and charge Mr. Z, the latter is going to learn of it sooner or later and then you stand a good chance of losing Mr. Z as a customer. The one sure, simple, easy way is to play no favorites and get a rational, legitimate profit for every bit of work you do.

There are today two or three large service departments that started out nearly a year ago on this legitimate-profit plan and they are succeeding. They charge for everything. If you drive your truck up alongside the curb in front of their office and their inspector goes over it, spending 15 minutes, there is a nominal charge based on the hourly basis. The owner does not object to this. You do not object to a doctor sending you in a bill after you have called on him for consultation and he has told you what is wrong and how you can get better. The business of the doctor is older than that of the motor car or motor truck. Legitimate doctors today are not advertising free diagnosis. Why should motor truck dealers?

#### On the Right Ledger Side.

The legitimate-profit plan will win confidences. Cutting prices shatters confidence quicker than any other business policy. When one customer feels that his neighbor is getting better prices than he is, he is pretty nearly ready to start buying at another store. A business man will quarrel if charged 2 cents for a morning paper which regularly sells for 1 cent. A cent is a small money value to fight over, but yet business men will fight, not for the intrinsic cent value but for the principle that underlies the act.

The same is true in your business career. If you sell tires to one man for a certain figure it will soon be found out if you cut prices to another man who is buying in the same quantities. Very few people can keep to themselves the secret of cut prices. They do delight in boasting of how they got the goods for a few dollars less than their neighbor. Such stories feed their vanity, and when the dealer starts out with favoritism and doing work for nothing, he is setting a trap into which he will himself walk in a few days, or perhaps months at the most.

One of the most successful printing houses credits the legitimate-profit argument to its present-day success. It did not do any business unless it made a certain profit above cost. Other printing houses were taking jobs at a mere pittance profit in order to keep their presses busy, as they put it. Soon the other fellow heard of the lower prices and he complained. He had as much right to them as anybody. The net result was that the printer would cut his legitimate profit this week, once again 6 months hence, and in many cases, by the end of the year his legitimate profit had vanished; and worse, too, he had lost some of his best customers.

#### The Eventual.

Mr. Dealer, these are business days—days when you cannot afford to conduct your business along other than legitimate lines. Your very existence depends on following legitimate practices. Our most successful merchandisers in other industrial lines have followed the legitimate-profit method for years and are successful. This method of doing business has established confidence. It has developed business. It has brought in new business. It has held the old business.

# SUPREME COURT DECLARES RESALE PRICE IS ILLEGAL

Highest Tribunal Declines to Permit Appeal of Waltham-Keene
Case—Holds Price Fixing is
Against Public Policy.

The fixing of a retail price by a manufactorer was declared illegal this week by the United States Supreme Court when it declined to review the Waltham Watch Co. vs. Keene case which had been decided in favor of the retailer in the United States District Court and Court of Appeals in New York City. The Waltham company sought to enjoin Keene from selling Waltham watches at cut prices.

He contended that when the manufacturer sold goods to the retailer the goods thereupon passed absolutely from the manufacturer's control, and the courts upheld this contention; following the decisions of the lower Federal courts those accessory manufacturers who had been selling under a system of price licensing, tentatively adjusted their plans, and a permanent adjustment now will be necessary in that there is no further appeal in the matter. The attitude of the courts throughout the case has been that the control of resale prices is contrary to public policy.

Manufacturers now hope the future may bring forth legislation which will legalize price maintenance, and several leaders of the industry have testined at Washington upon the matter.

On February 14, Henry B. Joy, president of the Packard Motor Car Co., Detroit, Mich., appeared before the judiciary committee of the House of Representatives and urged the continuation intact of the Sherman anti-trust act with the interpretation that a maker may fix a universal price for his products.

Alfred Lucking, a director of the Ford company, stated that he opposed monopoly but contended that where competition was sharp, as in the automobile business, a fixed, unvariable retail price would not operate to aid a monopoly.

### Woodward Pump Business Reorganized.

The Woodward impulse tire pump, which was placed on the market last season by Woodward & Son, Toledo. O., will hereafter be marketed by the Woodward Pump Co., a \$50,000 corporation, which is a reorganization of Woodward & Son; the new company, which has located at 222 3rd street, Detroit, has as officers: President, Abishai Wood-

ward; vice-president, E. L. Ackerman; treasurer, C. E. Blaesser; secretary, C. B. Woodward. Ackerman is president of Joseph N. Smith & Co., Detroit, and this company will manufacture the pump. Because of an anticipated increase in business, the list price has been reduced from \$15 to \$10.

#### New York Dealers Elect Officers.

Following the election of a board of directors of the Automobile Dealers' Association of New York, which action took place at a meeting held on the 18th ult., th enewly elected board met on Tuesday, 3rd inst., and unanimously elected R. J. Johnston, of the White Co., president to succeed Arthur M. Day, who has retired from the automobile business. At the same time, Charles H. Larson, of the Oldsmobile company, was reelected vice-president and Frank Eveland of A. G. Spalding & Bros. was reelected secretary and treasurer; Chas. A. Stewart also continues as general manager. Subsequent to the election it was decided to appoint special committees to consider a number of bills which are pending before the New York State Legislature.

#### California Dealer Extends Territory.

After having retained representation of the Chalmers Motor Co. for the northern part of California since Chalmers cars first were introduced in that territory, the Pioneer Automobile Co. has relinquished the line, which hereafter is to be handled exclusively by the Western Motor Car Co., which is headed by Earle C. Anthony. The Western company has handled Chalmers cars in Southern California during the past 10 years but now will have the entire State and also Nevada. The Pioneer company has disposed of its stock of cars and parts to the Western company. E. H. Sells is to be placed in charge of the sales department of the Western Co. The Pioneer company is to withdraw from the trade.

#### Kelly-Springfield Declares a Dividend.

A quarterly dividend of 1½ per cent. has been declared on the 6 per cent. cumulative preferred stock of the Kelly-Springfield Tire Co., on which stock there are now accumulated dividends amounting to 78 per cent. The 1½ per cent. dividend is payable April 2 to stockholders of record at close of business March 20. The directors are working on a plan for the payment of the accumulation, the result probably being interest bearing script, to be retired in annual installments.



March 2-7, Utica, N. Y.—Utica Automobile Club's automobile show in the State Armory.

March 3-6, Grand Forks, N. D.-Fifth annual show in the Auditorium.

March 3-7, Fort Dodge, Ia.—Fort Dodge Dealers' Association's third annual show in the State Armory.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics' Building.

March 9-14, Des Moines, Ia.—Automobile Dealers' Association's annual show.

March 14-21, Harrisburg, Pa.—Harrisburg Automobile Dealers' Association's fifth annual show.

March 16-21, Cedar Rapids, Ia.—Fifth annual show of the Cedar Rapids Automobile Dealers' Association in the Auditorium.

March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics' Building.

March 21-28, St. John, N. B.—New Brunswick Automobile Association's Maritime show in the Armoury.

March 27-28, Racine, Wis.—Racine Automobile & Motorcycle Association's show in Lakeside Auditorium.

April 9-15, Manchester, N. H.—Automobile show.

Nyberg Trying to Repurchase Factory.

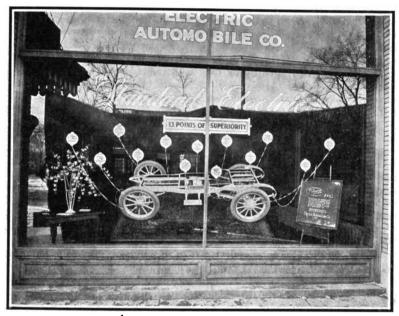
Although the plant of the Nyberg Automobile Works, Anderson, Ind., was purchased at a trustee's sale by James T. Sansberry and A. C. Burley, Henry Nyberg, the former proprietor of the business, has hopes of raising sufficient funds to redeem the business; he is at present in charge of the factory and expects to operate in the spring.

Shawmut's Consignee Poor Accountant.

The Shawmut Tire Co. filed suit this week in the Supreme Court for New York county against Charles H. Latham. Harry E. Phelps and Raymond H. Weiss, who trade as the Shawmut Tire Sales Co., at 256 Wets 55th street, New York City; the defendants accepted goods on consignment and are charged with failing to render an accounting.

# MAKING CHASSIS INTO A "SILENT SALESMAN"

Ribbons and Explanatory Placards That Thrust Thirteen Selling Points Into the Public Eye—Novel Plan of Electric Car Dealer Which Aroused Interest and Paved Way to Better Business.



HOW THE STANDARD ELECTRIC'S 13 SELLING POINTS HIT THE PASSERBY

Helping the car sell itself is one of the advanced degrees in salesmanship. There is always work for the flesh-and-blood salesman, regardless of how able the car is to help make the sale, but when the two work together the results of the combined effort are greater.

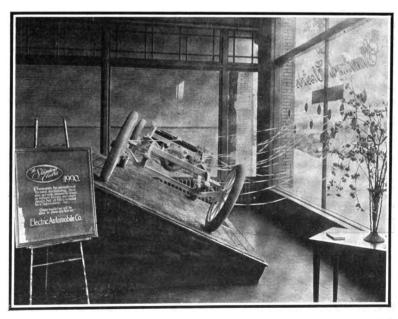
In aiding the car to sell itself, an effective scheme, which has been tried with success by several dealers and described in Motor World, is that of attaching ribbons to the "selling points" of the car in the show window and running the ribbons to placards with appropriate wording, the placards being placed in conspicuous positions.

An unusually effective variation of the "ribbon-placard" scheme has just been used by the Electric Automobile Co., of 1221 Woodward avenue, Detroit, to stimulate interest in the Standard Electric and the results are said to have been gratifying. As accompanying illustrations show, an inclined platform was crected at the front of the salesroom, was covered with a rug and its sides filled in with an inexpensive black cloth. Upon this platform a chassis was placed.

Thirteen selling points, constituting the principal advantages of the Standard Electric, were singled out, and a white ribbon attached to 13 different parts of the car; each ribbon was then carried to the window and pasted to a round placard, which was, in turn, pasted to the glass. The cards were numbered from 1 to 13, each number being sufficiently blurred into the background to permit the "selling point" to be printed over it distinctly.

When a passerby was halted by the unusual display and inspected the cards in numerical order, he read:

- 1-Brakes housed-in-; dust-proof.
- 2—Swiveled steering bracket; prevents steering column from turning.
- 2-No universal joints in drive shaft; uses less current.
- 4—Hardened and ground spring bolts with integral grease cups.
- 5-Straight-line type of shaft drive, minimizing friction losses.
- 6—Compound gear reduction, permitting use of direct, high-speed motor.
- 7—Trunnion suspension of motor gives universal spring action.
- 8—Both brakes lock; essential on steep grades.
- 9—Necked-in frame; permits turning in a small circle.
  - 10-Tie-rod back of axle for safety.
- 11—Inverted type of Elliot-Mercedes knuckle; prevents vibration of steering lever.
- 12—Steering lever; above axle and protected by same.



"BEHIND THE SCENES"-THE MECHANICAL DETAILS OF THE ARRANGEMENT

13-Large, serviceable hub bearings. And every time he read a card he automatically traced the ribbon to the part described.

At the observer's right an attractively framed invitation to "come inside" reposed upon an easel, while a bouquet at the left added "atmosphere." The results were excellent. Ralph C. Jones, the company's manager and the designer of the display, stated that it brought more people into the salesroom than anything else the company had ever done and secured more prospects' names than ever were secured at any other one time, excepting the automobile shows.

One woman saw the display while passing in her car of another make and visited the salesroom that evening with her husband. Several sales are on the verge of being closed; in addition, the interest aroused is considerable - and interest is a starting point of sales.

#### U. S. Motor Branch's Landlord Sues.

The trustees of the estate of Sarah J. Howard, Chicago, have instituted suit in the Federal court in Wilmington, Del., against the Maxwell Motor Co. for \$16,-000; this amount is claimed as the unpaid rent on a lease taken to property by the United Motor Chicago Co., a subsidiary of the United States Motor Co., the latter being the forerunner of the present Maxwell Motor Co.

#### Cyclecars Coming from Owego, N. Y.

Charles B. Hatfield, Jr., until recently connected with the Hatfield Motor Truck Co., of Elmira, N. Y., has organized a \$100,000 company to produce a cyclecar which will be sold under the name O-we-go. The car will be produced in the plant of the Ives company in Owego, which has been leased for the purpose, and Ives motors will be used. The car will seat two passengers, tandem fashion, will have 105-inch wheelbase, 3-inch tread, and will weigh 600 pounds.

#### Two Payments by Detroit Trust Co.

As receiver or trustee, the Detroit Trust Co., Detroit, Mich., is preparing to make disbursements to the creditors of two companies within the next few days. A second payment of 5 per cent., amounting to about \$150,000, will be made by the company as trustee in bankruptcy to the creditors of the Michigan Buggy Co., Kalamazoo, Mich.; a similar payment was made a month ago. A third and final dividend will be paid by the company, as receiver, to the creditors of the New Process Steel Co., formerly in Marshall, Mich.

## BRIGHT OUTLOOK REVEALED BY NEWARK'S ANNUAL SHOW

Largest of Local Shows Near New York Brings in Great Volume of Business - Sixty Cars Sold During the Week.

Additional evidence of the growing importance of the local automobile show, staged by a local dealer's association and peopled with the local distributers of national products, is afforded by the exceptional success which marked the holding of the seventh annual exhibition of the New Jersey Automobile Exhibition Co., which closed its doors on Saturday night last at the First Regiment Armory in Newark. The Newark show, which has steadily increased in size during the seven years that it has been a regular function, is by far the largest of the local shows staged within the metropolitan area and the lesson that can be drawn from it is a pointed one.

Contrary to what may be expressed as the general expectation, actual sales of cars and of commercial vehicles were numerous, but what is of still greater importance, the volume of inquiries and "live" leads which resulted have led to expressions of opinion from the dealers who participated that admits of no doubt regarding the future holding of the show. The spirit of optimism is rife.

Although most dealers approached were loath to put into figures, the amount of business that had been done at the show during the week, a careful canvass of a number of the more prominent car distributers leads to the information that more than 60 pleasure vehicles actually were sold and cash deposits taken, and at least half a dozen commercial vehicles were disposed of. One prominent dealer who handles cars which sell at a popular price states that his business alone will total approximately \$25,-000 for the week. Two dealers, one of whom distributes tractors, and the other a low-priced two-passenger roadster, report that they received no fewer than 32 and 58 bona fide prospects, respectively, and other dealers render reports which are only slightly less optimistic.

All told, there were 38 dealers represented at the show, and between them they exhibited the products of 37 pleasure car and 12 commercial vehicle fac-

## Creditors Take Hand in Suburban Motor.

In order the better to prosecute affairs for the creditors, the stockholders' com-

mittee which for more than a month has been delving into the books of the Palmer Motor Car Co., and the Suburban City Co., Ecorse, Mich., which succeeded De Schaum's Suburban Motor Car Co., has elected its own board of directors with F. Thomas Hadwin, a stockholder, as president and Samuel Lane. Learnington, Ont., secretary. According to those who have been carrying on the investigation, the crisis was reached because of poor management. The company was organized in 1911, its corporate existence dating from Sept. 7th. The corporators named were W. A. De Schaum, F. H. Farnham, O. R. Bachman and B. H. Farnham.

The assets of the company include 333 unsold lots valued at \$225 each, making \$74,925; 392 lots sold for \$191,175, which will bring \$113,825 if a 30 per cent. discount is given; payments to date, \$40,-144; factory and six-acre site, \$15,000; furniture and fixtures, \$500; total, \$109.-457. The liabilities are: Factory lien, \$8. 756; bills payable, \$2,006; sundry liabilities, \$4,142; land contracts and mortgages, \$56,682; sundry liabilities of Palmer Motor Car Co., \$3,000; total. \$74,646. It is stated that of the stock. \$107,000 represents the land company and \$86,200 the automobile company, and as the stock was sold at half, this represents \$96,700.

#### Church Claims Unfair Treatment.

Alfred W. Church, formerly of Wyckoff, Church & Partridge, one-time Commer truck importer, has sued the creditors' committee individually, the Commercial Trust Co. of New York City. which was the depository in hankruptcy. the Vaughan Car Co., and John A. Sheppard, Jr., the W. C. P. receiver, in a suit in equity in the United States District Court in New York City in relation to the distribution of the assets of Wyckoff, Church & Partridger

He declares that he was not notified of the plan of reorganization whereby George A. Ellis, Chester Griswold and Howard C. Dickinson agreed to buy the assets, excepting a claim against the Driggs, Seabury Ordnance Corporation. for \$150,000, one-third of which never was paid, and he further charges that he lacks knowledge of or believes there was unfairness in certain matters. He makes a money claim of about \$3,000 and demands that the court determine his rights, enjoin one member of the creditors' committee from selling \$50,000 of W. C. P. bonds and direct the other defendants to answer certain questions which he asks.

Some of these are: What was paid to

Ellis, Griswold and Dickinson when the lease and buildings of the company at Broadway and West 56th street were sold subject to a mortgage of \$200,000?

In whose name was the title taken at that time and in whose name is it now?
Who holds the \$150,000 notes given to one of the creditors' committee?

Who holds the \$50,000 bonds procured at the time of the loan?

Did one of the creditors' committee take \$50,000 bonds from the Commercial Trust Co. of New York City, the depositary? If so, what was the consideration therefor? Who now holds them?

#### Knox Sale Date Not Yet Set.

Although no definite date has as yet been set for the public sale of the property of the Knox Automobile Co., Springfield, Mass., Charles G. Gardner, the trustee, is actively prosecuting a campaign to interest purchasers. According to his report, there was sold by him in 1913 fire apparatus valued at \$269,400 and tractors valued at \$392,250. His statement of assets, as of November 30 last, is as follows, part of the real estate being subject to a mortgage of \$3,900: Real estate, \$298,012.49; machinery and equipment, \$224,874.83; agency equipment, \$5,000.00; patterns and drawings, \$36,936.46; merchandise inventory, \$859,337.78; unexpired insurance, etc., \$8,-000; accounts receivable, net, \$186,586.65; cash, \$15,666.68; total, \$1,634,414.89. Land, \$78.550.00; buildings, \$237,145.31; dwellings, \$8,108.10; total, \$323,803.41.

#### Talk of Two Air Brake Factories.

The arrival of A. T. Stedman and H. C. Steele, who are described, respectively, as manager and secretary of the Rotary Air Brake Co., is chronicled on the Pacific Coast where, it is stated, they will erect a factory, probably in Los Angeles, for the manufacture of engines and air brakes for automobiles. They are reported as having stated that some of the best known manufacturers of automobiles have placed orders for their air brakes and that these orders will be filled "as soon as their Coast and Eastern plants shall have been opened." So far as the trade at large is concerned, however, nothing is known of the brake.

#### Mosler's Factory to Become a Park.

The factory and site of A. R. Mosler & Co., which is located near the northern boundary of The Bronx, New York City, has been purchased by the Bronx Parkway Commission and ultimate plans include the transformation of the spot into a stretch of greensward and flowers; Mosler will remove his busi-

ness within six months of the time the property is formerly taken over, which will be soon, but he states that he does not expect to leave for 8 or 10 months. The factory and site brought \$93,000.

When Mosler takes up the proposition of relocating his business he will reorganize in two separate departments, one devoted to the manufacture of Spit Fire spark plugs and the other to the screw machine division which is no small part of his business. No location has yet been chosen, but the factory doubtless will be in or near Greater New York. His present factory is located on the banks of the Bronx river and is connected with railway lines on the opposite bank. The commission is beautifying the entire section.

#### Lincoln Car Moving Toward Production.

The Lincoln Motor Car Co., successor to the American Motorette Co., and which plans to build a light car at \$595, has become a Delaware corporation, although it proposes to locate in Detroit; it is negotiating for a factory site and plans to build 10,000 cars the first year. It is incorporated at \$1,750,000 with the following officers: President, H. D. W. Mackaye; vice-president, J. D. Mackaye; secretary, C. F. Remington; treasurer, F. D. Hovey; besides these, W. J. Maloney, Wilmington, Del, is a director.

#### Shepherd and Oakland Settle Dispute.

Following a financial settlement, the suit by Irving B. Shepherd against the Oakland Motor Car Co. in the Federal court in New York City is to be discontinued; Shepherd, who is a part of the Shepherd Motor Car Co., former Oakland dealer in New York, claimed a defective flywheel burst while he was adjusting a carburetter and caused personal injuries for which he asked \$15,000. The action was begun more than a year ago.

#### Packard Branch Cashier in Custody.

George M. Walsh, former cashier of the Chicago branch of the Packard Motor Car Co., is awaiting trial in that city on a charge of absconding with \$2,000 of the branch's money January 9; he was arrested in Buffalo January 17 and was extradited last week. Branch officials state also that the books are \$3,000 short in addition to the \$2,000.

#### Maxwell Motor Quarters the Union.

To render its sales organization more efficient, the Maxwell Motor Co., Detroit, Mich., has divided the United States into four selling zones, in charge of C. H. Booth, W. D. Paines, T. J. Toner and C. R. Newby. Frank Shaw has been des-

patched to South America and John York to Japan to further foreign sales in those countries.

#### Express Companies Not to Discontinue.

Setting at rest various rumors which have become current during the last few days, Vice-President F. F. Flagg, of the United States Express Co., has stated that that company does not propose to liquidate and discontinue its business; similar statements have been made by the Adams and Wells-Fargo companies.

#### Names Receiver for Ideal Switch.

Newell Jennings has been appointed receiver for the Ideal Switch Co., Inc., in the Superior Court, Hartford, Conn., upon the petition of Frederick Hoerle; three months from March 2 has been fixed as the limit of time for presenting claims.

#### Rubber Goods Makes 60th Dividend.

The 60th regular quarterly dividend has been declared by the Rubber Goods Mfg. Co. It amounts to 134 per cent. on the preferred stock and 3 per cent. on the common, both payable March 16 to stockholders of record at 3 P. M. March 10.

#### Kinsman Passes Over Great Divide.

B. T. Kinsman, manager of the Chicago branch of the Studebaker Corporation, died suddenly on Sunday, 22nd ult, from acute indigestion. Kinsman was well known in the trade, formerly having served as manager of both the Boston and Buffalo Studebaker branches.

#### U. S. L. Branch Moves Uptown.

The New York branch sales office of the U. S. Lighting & Heating Co., heretofore maintained at 30 Church street, has been transferred to 210 West 50th street. This change brings the sales office and service station in the same building.

#### Anderson Gear Buys a Plant.

The Anderson Roller Gear Co., of Cleveland, O., has purchased the plant and property which it held under lease and option and which previously was owned by the Cleveland Drop Forge Co. The property is located in the new Cleveland gas field.

#### "Juvenile Auto" Appears in Toledo.

The American Juvenile Auto Co. has been incorporated in Toledo, O., with \$10,000 capital, by Clayton Murphy, William C. Binns and A. C. Luken; all are connected with the Toledo Credit Rating Co.





## TACT AS A SALES ESSENTIAL

Other Qualities and Ability Discounted by Lack of Finesse in Handling Prospect—Dealer Who Killed Sale at Beginning.

"Say, old man, I wish you would speak to my father and get him to buy a new car this year. That one he is driving is a collection of junk and it is likely to cause him a great deal of trouble. As a matter of fact, I am ashamed every time I see him in it. Say a word or two and get him to come up to your place and look your stuff over." So said a young business man to a friend who dealt in automobiles, as they left the dining room of a club to which they both belonged.

Next time the dealer met the father, who had plenty of money and had once been candidate for governor of the State, he "went right to it," as the expression goes. "Mr. Rodes, that car you are driving is positively rotten. It's a bunch of junk. You ought to be ashamed to drive it. Come up and see me and get one that is up to the year in style."

The old man's eyes blazed. He was insulted through and through. He went after that dealer hammer and tongs, and as he was an expert at "handling the English language" the dealer wilted to almost invisible size. When the speaker got through the dealer apologized. But it was no use—that dealer will never sell "Old Man Rodes" a car as long as he lives. And it was all because he lacked tact.

And this dealer sells a splendid line of cars and does business on the square, gives model service, looks after his customers to the limit, but he is not doing the volume of business nor is he making as much money as the quality of his line and the merit of his institution warrant.

Ask his friends what sort of a dealer he is and they will say, "Fine!" Inquire about the cars he sells and they will say "Great!" Be persistent and inquire why he does not do a larger volume of business with such a good location and such a good line and with so much energy and they will say, "He has one big fault. He lacks tact."

# LOOKING FOR OBJECTIONS TO THE OTHER MAN'S GOOD IDEA

The minute some people hear of a new idea they begin to look for objections. Instead of trying to see how they can carry it out and adapt it to their business they say to themselves, "That idea is all right for Chicago, or Detroit, or New York or wherever it springs from, but it cannot be worked here. Our people are too conservative."

All this means, that if they find enough objections they can excuse themselves to themselves for not carrying out an idea that promises to require a little work, a good deal of thought and perhaps a small expenditure of money.

This is foolishness. Instead of looking for objections, one ought to look to see how he can utilize the idea if it is a profitable one. The truly successful man gets ideas for his business from everything he sees and hears.

# DISPLAY WINDOWS THAT GO WITH GOOD MERCHANDISING

Much has been said and written during the past two years about merchandizing methods in the automobile business. It is beginning to bear fruit. The dealer who absorbs the idea and employs it cashes in on it.

During the past two weeks many effective window displays have come to notice from different parts of the country, and all of them bear the earmarks of good merchandizing. Even as far west as Oklahoma City attention is being centered on attractive window displays. And the best part of it is that when a dealer once gets the idea and sees how successfully it works he is keen to outdo each past effort.

With cars looking as much alike to the general public as they do, anything that creates a special interest or invests the car with special attractiveness at a certain time, gets attention. One dealer is planning a new background of gray stone wall with handsome gates and big ball-topped pillars which looks like the entrance to a country estate. A local scene painter did the work and did it well. Incidentally, he is planning several others; they don't cost much, but they will add immeasurably to the drawing power of his windows.

#### ENTHUSIASM A MIGHTY FORCE IN THE MAKING OF SALES

"Enthusiasm will sell a poor article against a much better one," remarked the general manager of a big truck concern. "I know for I have tried it. Give me the man with plenty of enthusiasm and I will take a chance on him every time.

"Enthusiasm is the match that kindles the flame of desire; it is the touchstone that gives magic power to the words of the speaker. His logic may be faulty, his words poorly selected, but if he has lots of enthusiasm his audience will not notice it. They will think only of what he is saying—of what he is talking about.

"Time and time again I have seen salesmen who are enthusiasts pull in orders for cars that I knew were not as good and up-to-date as other cars priced at the same money. What brought about the result? Just one thing, enthusiasm—a disease that's well worth spreading. You cannot innoculate too many of your salesmen with it."



#### TAKING A MAN AT HIS WORD

Type of Men Who Mean It When They
Say "I'll Talk Car in a Month"—
One Dealer's Method of Handling Busy Executives.

"The higher up the man, the more responsible his position and the greater his ability as an executive, the simpler and more direct are his ways of doing business according to my experience," remarked a dealer who has a reputation for selling cars that easily places him in the first rank of real automobile salesmen.

"Our men are all instructed when dealing with men of this type to take their statements at par. For example, if one of these men tells our salesman that he is not ready to buy now but will be in a position to talk to him in a month, he is instructed not to go near him until that date. Big men like to be recognized as big not by your words but by your actions. They like to be taken at their word, and the man who remembers this will have success in dealing with them.

#### An Order That Came Easily.

"The general manager of one of the largest manufacturing plants told me 60 days ago that he would be in a position to talk business on the 16th of February. I did not even repeat the date after him, as is the custom of many salesmen who thus seek to re-impress it on the prospect's mind. I changed the subject, got out of his office and did not say a word about car to him again, though I ran across him many times in the interim.

"On the morning of the 16th his stenographer called me up and said Mr. Blank would see me that afternoon any time after 2 o'clock. I made out the order, put it in my pocket and was at his office about 2:30. He had just stepped out for a minute. While I waited I slipped off my overcoat, put my hat and gloves on his desk and sat down and waited. After the usual greetings, he ast down and, without any comment beyond the words, 'Sign here, please,' I handed over the contract for his signature. He smiled and remarked, 'You're a quick worker, aren't you?' I smiled and he sat down and, without any comment I took him at his word and he made good."

## NECESSITY FOR CULTIVATING ALERTNESS IN SALESMEN

When salesmen are in the store or salesroom, or office, whatever it is called, let the order in which they are to care for incoming customers be thoroughly understood. In altogether too many places of business a customer can enter and may be allowed to wait three or four minutes while three or four so-called salesmen talk and gossip among

#### Why the Stranger Didn't Come Back.

In Indianapolis a certain dealer had two men on the floor. A stranger entered-and the two salesmen continued their conversation for several minutes before deigning to notice the entrance of the stranger. A dispute as to who is entitled to the commission may be ever so important, but a customer entering the door is by far more important. After several minutes-they seemed like an eternity to the prospect-one of the salesmen came forward. "Is Mr. Blank in?" inquired the prospect, who had really dropped in to get further light on a certain point. "No," was the answer. "Thank you," said the prospect, and out he walked. He never came back. Mr. Blank is probably wondering why he cannot close him, but he can't.

There is salesmanship in the manner of ready alertness shown by many trained men. It is a big asset. Cultivate it if you haven't developed it already in your force.

## NEAR-BIRDSEYE VIEW OF THE MODERN AUTOMOBILE DEALER

Combine the methods of the enterprising merchant who is continually studying ways and means for making people look in his show windows and pay attention to the offerings of his store with the virile aggressiveness of the highest type of specialty salesman who does not wait for business to come, but is continually on its trail, and you have a mental picture of the modern automobile dealer. He must be alert; he must be on the job; he must be continually studying his business through the eyes of the buyer as well as through the eyes of the salesman. He must keep his dignity as a merchant, but he must never forget that activity and enterprise is a far greater asset than dignity and likely to yield him very much larger financial re-

Every salesman has abilities that are peculiar to himself. So has every other salesman. That's the fundamental idea of real team-work. Use every man's abilities to the utmost. Where one man may fail another may win. "God bless him if he does!" That's the spirit! No jeal-ousies; no bickerings. The good of the house first, last and all the time.

The Detroit branch of the B. F. Goodrich Co. has a complete record of every car owner in the State. This shows the kind of car, the year, and every detail that could possibly be interesting to a seller of tires. It is kept up to date and frequently used as a mailing list.

# QUALITIES THAT OIL THE MACHINERY OF THE SALE

Studebaker Man Places Value Upon Cheerfulness, Courtesy and Tact — How It Brought One Dealer Success.

"Cheerfulness, courtesy and tact are as oil to a motor, making the machinery of the sale run freely and without friction. The name Studebaker may lead a man to call at your salesroom, but the cordiality, cheerfulness, tact and courtesy of the salesman will bring the customer back to the salesroom where these things are to be found. Put these qualities into your work and they will pay you good dividends in the form of orders," says George H. Phelps in the Studebaker News.

"Tact enters very largely into all sales. It consists briefly in being careful not to offend and in quickly knowing when you are on the wrong lead and graciously backing out. Tact and courtesy are very much alike. Courtesy is the lever which opens all doors-the lure of it is irresistible and springs from the heart of every successful salesman. Remember that a buyer's interests are your interests, and if you will but get on his side of the fence and look at the matter from his viewpoint, he will meet you more than half way. Do not have only the desire to sell-have the desire to serve as well, remembering that the science of salesmanship is the science of supplying needs.

"Courtesy is no respecter of persons. It is appreciated by the junk dealer as well as the banker-it is due the little fellow as well as the big fellow. Courtesy never allows you to criticize a competitor's goods-it reflects on the buyer's judgment and the world hands back to you exactly what you give out to it. Unless it pleases you to please a prospective customer, you might as well get out of his office. He himself will probably more or less literally throw you out in the end and you will find yourself in the street with an unsigned order blank in your hand wondering why you didn't finish your selling talk.

"You cannot always interest your man in your car at the start, but you can be quick to discover when you strike a responsive chord or when you find a point of contact. You should be as quick to get such signals as is the engineer of the Twentieth Century Limited to discover a red light that tells him to stop. The salesman who runs past these

flashes is as careless as the engineer who fails to note the signals set for him—both are rushing at full speed to their finish.

"There is only one sure way of reaching a point of contact with your customer, that is by courtesy and cheerfulness. A tactful, well-mannered approach will break down a prospect's guard and hold his attention during the first three minutes of an interview as easily as the Varsity halfback will break through the freshman line.

"Cheerfulness and courtesy are legal tender in any office or salesroom. They are the best tools that a salesman has to work with. Armed with these and with persistence, a salesman can secure an interview with any citizen of the United States of America. With these he can ward off rebuff, dispel impatience and in fact, make headway where no other human agency could penetrate. And I wonder if you have ever noticed that a cheerful smile will make a car seem better to the customer who buys it?

"Three years ago I first heard about Rudolph Hokanson, who was recognized as the greatest automobile salesman in Wisconsin, if not in the entire Northwest. He was the head of a company of his own, capitalized at \$80,000, and was doing an annual business of half a million. In his home city he is recognized as one of the most progressive business men. He is known to almost everybody as 'Rudie,' and the man who does not like him and does not trust him has yet to be discovered.

"About 13 years ago Hokanson wore pants that came half way between his ankles and his knees; talked some foreign lingo that we shall call Scandinavian; knew nothing about America and American institutions; never had heard of an automobile; had no special training in any line and could not hold the simplest conversation in English. He had no money and no prospects of earning more than the wage of a common laborer and was a fellow whose allaround equipment was not of the kind to compel anyone who knew him to prophesy any special kind of success for him

"It would appear that he had discovered the lamp of Mr. Aladdin of fable fame. Hundreds have wondered where he got his secret—but Hokanson hasn't any secret. He has succeeded because he has always tried to please those with whom he had dealings. His customers trust him to give them a square deal and he treats them in a manner that retains their trust. His business is built, as is all business that succeeds, on confidence.

Every one who knows Rudie is a booster for him. The reason is that Rudie is an out-and-out booster for everyone else.

"Let me tell you a litle tale about him as told to me by a man who knows him:

"I was a reporter on the Wisconsin State Journal. At one-thirty the report came into the office that a man had been found dead on the drive three miles from town. A car was needed. I called up one dealer and asked for a car in a hurry. "How much is there in it?" be asked.

"'I had not a minute to waste dickering and I called up Rudie. "I'll be at the office in five minutes," he yelled as he hung up the receiver. Then he pushed the car to the limit. "This is breaking all speed laws, I know, but you newspaper fellows want things in a hurry," he said, swinging the car around the corner on two wheels. We picked up the coroner on the way; examined the man, got his name, occupation and discovered where he lived: notified his friends and drove like the wind back to the office. Soon two fellows were gathering up the loose ends of the story by telephone; the city editor tearing off my story almost a line at a time and sending it to the machine. A trifle after three it appeared in the regular edition on the first page."

"This is a little thing, I know, but Rudie was always doing little things. I am not singing the praise of a great world-known man, but I am singing the praise of a man who, in his department of the world's work, is a master.

"He gave himself to others. That is the peculiarity of real successful salesmen—they are givers and, strange as it may seem, the Givers are the ones who most truly Get.

"The radiancy of your personality is an intensely practical, business-building success-achieving thing. Use it."

#### No Separate Cyclecar Exhibit.

Although manufacturers of cyclecars would have it so, it does not appear likely that there will be a separate exhibit of the little vehicles in conjunction with the 1915 National shows. The National Automobile Chamber of Commerce has placed itself on record as favoring the inclusion of cyclecars as a class with automobiles, and it is denied that the Chamber has made advances to the recently formed Cyclecar Manufacturers' National Association to place them in a class by themselves. It is stated that. provided the movement gains sufficient impetus, the Chamber will segregate cyclecars as it has segregated electrics.

## SENDING A LIVE SALES MESSAGE IN A CATALOG

## Little Personal Touch That Adds Distinctiveness to an Otherwise Commonplace Book—Reilly Explains to the Sales Manager How Even Circular Letters May Be Made More Effective.

"—are sending to you under separate cover a catalog—." Reilly scanned the pages of a catalog and dictated at the same time. "You will notice that pages eight, nine and thirteen have been turned down. Upon these pages are marked paragraphs which we believe will—

"Hello, Jim! No interruption at all! Come right in; I'll be through in a minute."

The Sales Manager sat down.

"Let's see," said Reilly, "where was I?"

"Upon these pages are marked—" prompted Nellie, the office typewriter chauffeur.

"Oh, yes! Upon these pages are marked paragraphs which we believe will---"

The telephone rang. Reilly answered it.

"Let's see, where was I?"

"Upon these pages are marked---"

#### Why and Wherefore of Form Letter.

"Oh, yes! Upon these pages are marked paragraphs which we believe will—which we believe will prove of especial interest to you. They contain information upon points which we believe every man should consider in purchasing a car." And then to Nellie, "Go ahead, finish it up!"

"What's the matter? Can't you start a letter and finish it yourself?" was the Sales Manager's semi-serious inquiry.

"Oh, she can write 'em about as well as I can," laughed Reilly. He glanced to see if the door to the stenographer's office was closed. It was, and he added: "She's as good on that work as any salesman."

"Don't you have a form letter to go with your catalogs? I should think such a stunt would take a lot of detail work off your shoulders."

"We do use a form—sometimes," replied Reilly.

"Well, what's the use of spending time writing a regular letter, then? Don't you give the prospect the credit of having sufficient intelligence to read a catalog without your help?"

"Ah-hah! Great secret!" Reilly made a Doctor Munyon gesture, one finger

standing up like a young church steeple. "I do and I don't."

"You do and you don't?"

"Quite right. I do give them credit of being able to read the catalog and I don't credit them with being able to get out of it what I want them to."

"But----"

"It's just a little instance of capitalizing the otherwise form letter, getting the greatest value out of the sending of the catalog, making the catalog help sell the car, making the catalog carry a real message instead of acting as the is mailed out with a stereotyped letter that smacks of form."

"Couldn't you get up a form letter that would do all that?"

"We have a form letter which is built upon that plan," replied the dealer, "and it does good work for us, but this one I sent today was a special effort. Our regular letter calls the prospect's attention to certain pages and marked paragraphs so that when the catalog arrives the prospect is looking for it, anxious to see what special points we are calling to his attention.



"NO INTERRUPTION AT ALL, JIM! COME IN! BE THROUGH IN A MINUTE"

dead sort of book that so many of them are."

"But we use a straight form letter at the factory. At least, I believe that's how we do it," he protested.

"That doesn't make your factory necessarily conspicuous," replied Reilly. "But why don't you?"

#### When a Catalog Is Wasted Effort.

"Just this—" Reilly unconsciously assumed an effective pose to accompany the assertion. "The ordinary catalog, sent to the ordinary prospect in an ordinary way, is partly wasted effort on the part of the dealer or manufacturer; but it especially applies in the case of the dealer who knows his man. But to any prospect, a catalog in which certain paragraphs are called to his attention is surer of being looked at than one which

"But this letter, that I was writing when you came in, is a deviation from the ordinary. It is to a man named Conley, who lives out on the south side; he's a lawyer and is doing a pretty good business. We try to learn as much as we can about people who ask for catalogs before we comply with their requests; in this case we found that Conley has a good practice and can afford a fairly good car. It also looks as though he would not want to go any higher than our price, and because of price might be tempted to buy a car of lower price. So right at the start I make an effort to get under his hide, to hit him in a tender spot.

"See this paragraph here." Reilly opened a catalog and pointed.

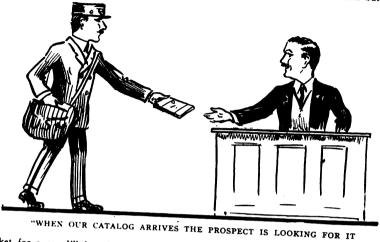
The Sales Manager read: "At less price you may be able to buy a car which

'will do'-which will carry you where you want to go. But such a car will not take you there and bring you back as comfortably, as safely, as stylishly or as economically. And it will not wear nearly so long or so well."

"I think that ought to be a telling point with Conley," explained Reilly, when the Sales Manager had read the paragraph. "As long as he is in the mar-

form letter we mark the paragraphs which contain the most pointed statements on these matters. A whole page, or two pages, may be taken up with a single selling point, but we mark but a

"No, not exactly. We have three or four general selling points which stand out above the others; they are our selling features, our strong points. When we mail out a catalog under the regular



ket for a car I'll bet the sense of the paragraph will stick by him. Every time he inspects a car of lower price he is going to have that thought bob up in the background and he will say to himself, 'I can afford the other car-the other car is better-I will be better satisfied with it-hadn't I better buy it?""

"But you'll do more than send him a catalog, won't you?"

## When Marked Catalog Does Its Work.

"Oh, certainly! To be sure we will! But aside from all the other work that is done on him he is almost certain to sit down now and then and compare the several catalogs he has collected, and there we have the advantage over the man who has sent his catalog in the ordinary way. Whenever Conley picks up our catalog it is distinguished from the others by the fact that the leaves are turned down and that the pages are marked-and they are passages which we believe will, out of all the rest of the book, have the greatest effect on him. The other catalogs may say almost the same thing, but if the same thoughts in the others are not singled out for him they are not going to be so effective. Right at the start we have planted a good selling point right in his front yard and the rest depends upon our per-

"What do you single out in your form letter-these same points?"

: ~

small part-a paragraph. Too much marking would be the same as none at all."

"Send a copy of that letter down to our advertising department, will you?" "Sure!" Reilly made a memorandum what kind of impression would it make on you?

"With a factory organization which has to send out bales of catalogs, the matter can't be handled as personally as it can by the dealer whose territory is smaller, who has fewer prospects and who is better able to know them personally.

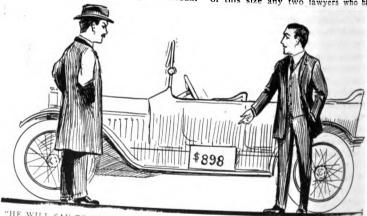
"Supposing I get wind of a doctor who is in the market; I dig up my testimonial files and select one or two or three testimonial letters from men in the same profession and send copies to the doctor-prospect. With these letters he is in a position to sell himself a car before he knows it; he has the names and addresses of men whom he knows or has heard of, and the natural thing for him to do is to ask these men what they think of our cars.

#### Not the Letter but the Writer.

"The same way with a contractor, or a salesman who has to cover territory around town, or a lawyer-

"Why is this car particularly fitted for use by a lawyer?" demanded the Sales

"It isn't." asserted Reilly. "But when we send to one lawyer the testimonial of another lawyer it is likely to have more effect because it is in the same profession and the men may know each other; as a matter of fact, Jim, in a town of this size any two lawyers who have



"HE WILL SAY TO HIMSELF, 'THE OTHER CAR IS BEST. HAD I BETTER BUY IT?"

on his pad. "But what your advertising department wants to get is not the form letter but the idea. Get this impersonal, stereotyped atmosphere out of your work-provided you have not done so. Whenever anything is to be done in the way of circularizing or follow-up, stop and ask yourself if it can't be done better. Put yourself in the place of the prospect and try to picture yourself receiving the stuff you are sending out;

money enough to buy a car generally do know each other."

"But will anybody believe a lawyer?" "They're 'some' Mexican athletes all right," replied Reilly.

"Mexican athletes!"

"Sure!" explained Reilly, "the guys that throw the-"

"'S'nuff!" The Sales Manager had met them before but didn't know what they were called.

## Pullen and De Palma Take American Road Classics

(Continued from page 5.)



DE PALMA, VANDERBILT WINNER

which was run on Thursday, was slower than Pullen's winning gait, though it still was fast enough to beat the best previous mark for Vanderbilt Cup contests. De Palma drove the 294 miles in 3:53:41, which figures out at 75.49 miles an hour.

In the Grand Prize race, Pullen had a cinch, figuratively speaking; he flashed across the finish wire an easy winner. Between Pullen's flying, yellow Mercer and the Marmon driven by Guy Ball, who finished second, there was a weary wait of 40 minutes. Fifteen minutes later Taylor and his Alco flashed across the line into third place; and one minute later De Palma limped in and won fourth honors. Pullen literally ran away from his field after Marquis was put out.

#### Uncertainty in the Vanderbilt.

But in the Vanderbilt, it was quite another story; there was scarcely a minute during the progress of the race when it could be predicted with any degree of certainty who would finish in the lead. Oldfield, who trailed De Palma, gave the wily Italian a hard fight, and if it had not been for tire trouble the name Oldfield, so often at the head of the list, might have been there again. Oldfield drove over the line just one minute and 21 seconds behind De Palma.

Both races were stubbornly fought and both were honestly run, and if there remains any regret that Tetzlaff's world's mark of 78.72 miles an hour still stands, it must give way before the thoroughly sportsmanlike manner in which the races were run and won.

The Western Automobile Association had both contests under its wing, so to speak, and if any doubt ever existed regarding the possibility of running these two events and of making them pay without relying upon entry fees, it must long ago have been dissipated. The track was in superb condition; the weather was all that could be asked; and it is estimated that upward of 250,000 spectators lined the course during the running of the contests.

#### Accidents Few and Far Between.

During the two days of racing, there were but two accidents to mar the sport. The first accident probably cost Pullen the Vanderbilt race. Pullen was well in the lead-he had made the fastest lap, his speed being about 85 miles an hourwhen, in the 14th lap, his car skidded and crashed through an iron barricade placed to protect spectators. The car was pretty well smashed up, though Pullen was not much hurt, The other accident, which occurred during the running of the Grand Prize on Saturday, was more serious. Marquis in the big English Sunbeam was leading the field by a comfortable margin at the beginning of the 35th lap. In attempting to round "Death Curve" at too great speed, however, his car overturned, pinning him beneath the wreckage. At first it was said he had been fatally injured, but later reports stated that he would live, though badly crushed.

What it means to lay down a schedule and then to stick to it—to stick to



B. OLDFIELD-HIS CIGAR



PULLEN'S WINNING SMILE

it despite the fact that other drivers shot past him as if he were anchored; what genuine headwork counts for in a road. race, was one of the things that was very forcibly brought home to those who witnessed De Palma's handling of his giant Mercedes in the Vanderbilt race. De Palma always has been noted for the brains he put into his driving, and his work on Thursday last was a remarkable exhibition of clever driving and generalship. The race was won by consistency.

#### Race Not to the Swiftest.

De Palma's big, gray Mercedes was admittedly slower than many of the other cars in the case; the motor had new bearings that were stiff; he had virtually to nurse the car along. And yet he won, and won in glorious fashion. True, Oldfield gave him a real race, but even with the redoubtable Barney, his cigar and his yellow Mercer only one second behind him along toward the finish of the grind, De Palma smiled-and stuck to his pace. De Palma's consistency is made plain by the fact that he turned his fastest lap in 6 minutes and 20 seconds; his slowest was clocked in 6:42.

It was Oldfield's tire luck that beat him; twice, the left front shoe went bad, which is rather unusual, and the right rear also suffered; in all, Oldfield probably lost about 8 minutes making fire changes. In addition, he was handicapped during the last few laps by a broken spark plug. He also claims that





BEFORE THE MOTORS THROBBED-VANDERBILT LINE-UP

he had a broken piston ring, which made it imperative for him to be cautious.

At the start of the race Wishart looked dangerous. Although he left the starter second, he was first to cross the wire on the initial round. But his triumph was short lived, for he was forced out at the end of the third lap with a cracked cylinder.

#### Pullen Takes the Pacemaking.

After Wishart's withdrawal, his teammate, Pullen, took upon himself the role of pacemaker. He kept in front from the second to the end of the 13th lap, when there came a skid and smash-up on Death Turn which changed Pullen from a contender to a spectator. While he was running, Pullen was moving. To him is credited the fastest lap of the race-6 minutes and 3 seconds-on his fourth circuit of the course, which is equal to 83.5 miles an hour. When eliminated, Pullen was between 3 and 4 minutes ahead of Gil Anderson. The Stutz pilot, however, was always in a position to take advantage of the least mishap to Pullen's Mercer, which he had been hanging to since early in the speed battle.

Anderson's reign as pacemaker was not for long. Although he remained in front for only four laps, it is a certainty that had it not been for the broken drive-shaft the Indianapolis boy would have made De Palma fight much harder for his victory than he did.

As long as Pullen led, De Palma was never better than fifth. With the Mercer out, De Palma crept up, passed Oldfield, who had clung tenaciously to the leaders, and went into second place. Barney never overtook De Palma again, although late in the race he was but 1 second behind him.

Carlson's race, too, was most consistent. Running fifth at the end of the eighth lap, he went into fourth place for four laps and after that was never worse than third, except on one circuit, when he slipped back a notch.

Pullen's elimination gave Earl Cooper his chance to finish inside of the money. He moved up to fourth place when the Mercer was permanently docked, and held that position until the finish.

As a race, the Vanderbilt was a better spectacle than the Grand Prize, which was run two days later, and which went for 403 miles. In the former, there was doubt right up to the last minute as to who would be returned the winner. But the Grand Prize was another story. For the first three-quarters of the race, interest ran high, for Wishart, De Palma, Anderson, Marquis and Pullen alternated in the lead, but the final test saw them all eliminated but Pullen, and when Marquis was forced out because of a bad

skid on Death Curve, Pullen flashed into the lead and never was headed.

Pullen, who formerly rode as Wishart's mechanic, drove the same car that he drove in the Vanderbilt. From the start Spencer Wishart went out in front and he set a sizzling pace for 22 of the 38 laps. The first 15 laps he had averaged 84.4 miles per hour and at 20 he had dropped to 83.6 miles per hour. Even then there was no indication that he would let up his dizzy speed, but in the 23rd lap a burned-out bearing stopped him.

#### De Palma's Three-Cylinder Finish.

This gave De Palma his chance, and the man who had twice won the Vanderbilt stepped out in front and stayed there to the end of the 29th lap, although he dropped the average below 80 miles per hour. Then a broken intake valve stopped De Palma, who had gone through the Vanderbilt without a stop and who was in his 30th lap in the Grand Prize before trouble overtook him. But it was serious trouble and prevented him from holding his place. A stop of 20 minutes was made at the pit while De Palma worked on his valve. Finally he had to go on in a crippled condition. running on 3 cylinders for the rest of the race, yet being able to pull down fourth money. Had he had an extra intake valve, he would have been a sure second, and might have won.

When De Palma was stopped in this manner it left the field clear for Marquis in the English Sunbeam, which had not made a stop up to this time. The easy manner in which he slid around made him dangerous, and it looked all over but the shouting. But Marquis only stayed in front for 3 laps. He was more

## STORY OF THOSE WHO FELL BY THE WAYSIDE

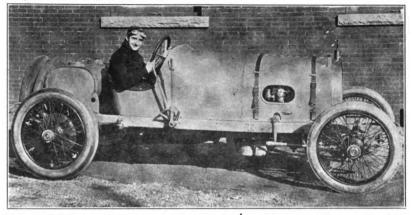
GRAND	PRIZE	
Driver and Car	Retired	
Verbeck B	Lap	
Verbeck, Fiat		Dante coloni
Cooper, Stutz Tetzlaff, Fiat	3	Broke valve
Tetzlaff, Fiat Goode, Apperson	.0	Broke valve
Goode, Apperson Wishart, Mercer	18	Broke push rod guide
Wishart, Mercer	18	Broke push rod guide
Wishart, Mercer Marquis, Sunbeam	23	Burned main bearing
lenette Al	23	Turned turtle
Richenhaches Man-	24	Broke cylinder
Anderson Same	34	Broke crankshaft
Anderson, Stutz	45	
VANDERRE		
Grant Value , VANDERBI	LT CUP	P
Grant, Isotta-Fraschini Lewis, Mason		Construct minter
Lewis, Mason Wishart, Mercer		Cracked piston
Wishart, Mercer Verbeck, Piat	2 3	Cracked piston
Verbeck, Fiat Marquis, Sunbeam		Cracked cylinder
Marquis Supheem	9	Broke oil feed
Goode, Apperson	10	Broke rear axle
Pullen, Mercer	11	Broke oil feed
Ball. Marmon	13	Went through fence
Anderson Sense	16	Ran out of gasolene
Jenette, Alco	18	Broke drive shaft
The state of the s	24	Broke cylinder
		micat chine

than 47 minutes ahead of the limping Mercedes when he met with the accident on the turn after leaving the grandstand. Some of the bystanders say it was caused by Marquis taking a hand off the steering wheel to wave to the crowd. At any rate, the Sunbeam turned over three times, then landed end on against a 7-foot fence. That Marquis and his mechanic were not killed is a marvel; both escaped, and went to the hospital.

#### What Happened to Anderson?

Pullen had been running along second and third most of the time, and when Marquis went out he was in a position to take advantage of De Palma's weakness and take the lead, which he never relinquished. The only one to fight him was Gil Anderson in the Stutz, who had been within gunshot of first place nearly all the way through the race. Gil ran second for 45 laps, then stopped unexpectedly in the backstretch, no reason for his withdrawal being given.

Anderson's stopping in the 45th lap robbed the race of its last semblance of competition, for Ball and Taylor, who finished second and third, never were in the fight. It simply was a case of a couple of cripples limping home. De



"ED." PULLEN IN GRAND PRIZE WINNING MERCER

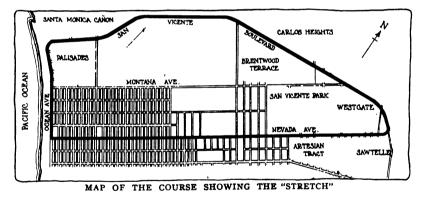
Palma, too, was in this same category, although earlier he had been a most important factor. Tetzlaff had been counted upon as a possible contender, but his giant Fiat went out with a broken connecting rod that punched a hole in the crankcase after he had gone 18 laps. At that time he was in third place. Tetzlaff made the fastest lap in the race—5:49, or 86.6 miles per hour—in the 12th. In this same round Wishart turned 5:54, the second fastest of the race.

Pullen cannot claim a world's record,

but he has the satisfaction of knowing that he covered 35 laps faster than did Tetzlaff when he put up his worlds' mark of 78.7 miles per hour. For this distance, Pullen averaged just 79.2 miles per hour.

Tires caused him to slow after this. In all, the Grand Prize winner had eight stops. Four of these were for tire changes and the rest were stops at the pits for spares. At the first stop at the pits he improved the opportunity to take on "gas" and oil-the only time during the race. Ball (Marmon) had most of his trouble in a bunch. In the 19th lap he stopped 19 minutes, during which he put on a new float in his carburetter, changed 3 plugs, took on fuel and water, adjusted magneto mounting and plugged a sand hole in the waterpump casting. Another time he used up 2 minutes changing a tire, and a third stop of 2 minutes was made to take on water and "gas."

Taylor's Alco made 4 stops, 3 for tire changes and 1 to take on supplies. Most of De Palma's trouble was caused by the broken valve.



#### SPECIFICATIONS AND EQUIPMENT OF CARS IN VANDERBILT CUP AND GRAND PRIZE ROAD RACES

				]	Magneto an	d	
Driver and Car	Bore and Stroke	Piston Dis.	Weight	Gear Ratio .	Plugs	Carburetor	Tires
Tetzlaff, Fiat	. 6 x 8	904	3250		Bosch	Master	Savage
Grant, Isotta		449	2600	2½ to 1	Bosch	Zenith	Palmer Cord
Wishart, Mercer	. 434 x 643	445	3000	21/4 to 1	Bosch	Rayfield	Palmer Cord
Anderson, Stutz	413/16 = 6	436	2450	2 to 1	Bosch	Schebler	Braender
Pullen, Mercer		445	3000	2¼ to 1	Bosch	Rayfield	Palmer Cord
Richenbacher, Mason		350	2000	21/4 to 1	Bosch	Schebler	Miller
		550		2½ to 1	Bosch	Master	Miller
Taylor, Alco*	. 434 x 5½	445	3000	2¼ to 1	Bosch	Master	Braender
Oldfield, Mercer		436	2450	2 to 1	Bosch	Master	Braender
Cooper, Stutz			2650	2 to 1	Bosch	Master	Batavia
Verbeck, Fiat	. 51/8 x 67/8	567	2300	2½ to 1	Bosch	Master	Goodyear
Gordon, Mercer	. 43% x 5	300					
Carlson, Mason	. 45/16 x 6	350	2000	2¼ to 1	Bosch	Master	Braender-Savage
Goode, Apperson	. 53/4 × 5	519	2750	2	Bosch	Master	Kelly-Springfield
De Palma, Mercedes	. 5½ × 6½	598	2600	2 to l	Bosch	Master	Braender
Marquis, Sunbeam*	$31/10 \times 6\frac{1}{2}$	<b>29</b> 9	2250	23/4 to 1	Bosch	Claudel	Palmer Cord
Ball, Marmon	43/4 x 7	<b>49</b> 6	2900	2 3/10 to 1	Bosch	Master	Miller
Jenette, Alco*	. 434 x 51/2	548	3325	2 to 1	Bosch	Master	Miller
Muth, Marmon	. 4½ x 5	318	2600	23/4 to 1	Bosch	Master	Miller
Goerimann , Touraine* .	. 4 x 534	433	2650	2¼ to 1 2¼ to 1	Bosch	Master	Miller
Lewis, Mason	1 5/16 2674	350	2000	2⅓ to 1	Bosch	Master	Miller
* Cim antindana	. 43/10 X0	330					
* Six cylinders.							

# Dealer's Legal Status

This Legal Department Will Appear Weekly. Its Object is to Educate the Dealer Legally.

By Geo. F. Kaiser.

A garage keeper has the same rights that any other person has in the absence of special statutes or ordinances imposing liabilities peculiar to his business upon him; or those which confer certain rights which would not be enjoyed, except by reason of the passage of such statute or ordinance.

Over 10 years ago the New York Supreme Court very aptly said, in the case of Smith vs. O'Brien, 46 Misc. 325, that "The garage is the modern substitute of the ancient livery stable."

This statement still holds good and his rights and liabilities at first hand are the same as were those of a livery stable keeper. This is specially true as regards his liability for property left in his care and his liability for injuries caused by vehicles rented out by him.

#### Garage Permit Held to Be Legal.

The various States have, from time to time, however, seen fit to pass statutes and ordinances, among which may be cited, for example, the ordinances which have been enacted in the various cities which hold that no one shall maintain or conduct a public garage for the storage, maintenance, keeping, caring for, or repair of automobiles or motor vehicles within the city limits without the permission of the superintendent of buildings, or some similar city official. These ordinances have been passed upon in numerous cases. One very similar to the one above set out was passed upon by the highest court of New York State, which is the case of People vs. Stroebel, 103 N. E. 735, and was found constitutional.

Then, too, numerous ordinances have been passed which are binding upon garage keepers, such as ordinances providing that a garage shall not be erected within a certain number of feet of a schoolhouse, or of a hospital, and others which provide under what condition gasolene may be kept on the premises and what amounts may be kept at any one time. On the other hand, there are special statutes which confer some peculiar privileges on the garage keeper, as, for instance, Section 184 of the Lien Law of New York State, which gives a garage keeper a lien for storing, containing,

keeping and repairing motor vehicles, also for furnishing gasolene and supplies, and which confers upon him the privilege of detaining cars in his possession until amounts due him are paid. Before this statute was passed, a garage keeper did not have such a lien.

#### Garage as a Nuisance.

The question whether or not a garage is a nuisance has come up in the courts time and again. It was held, in the case of Stein vs. Lyon, 91 Atl. 593, that a garage is not of itself a nuisance and that if it is conducted in a proper manner, in a suitable locality, it is perfectly lawful and legitimate. The court said, however, that if the locality were unsuitable and not fitted for such a business, it might then constitute a nuisance.

The New Jersey courts adopted the same rule, in the case of O'Hara vs. Nelson, 63 Atl. 836, and added that, if a garage is dangerous to property, or to health, or if it causes offensive odors, then it might be a nuisance and might be abated.

#### May Bar from Residential District.

An ordinance prohibiting a garage in a residential district has been held to be constitutional in New York. This was held in the case of People ex rel. Cornhill Realty Co. vs. Stroebel, 141 N. Y. S. 1014.

In an interesting case where there was a restriction in a deed which forbade the erection on the land of "any tavern, drinking saloon, slaughter house, skin dressing establishment, or any other building for offensive purposes or occupation" it was held that a garage was properly classed with the kinds of business above mentioned and that a building could not be erected to be used as a public garage for the hire, storage and repair of automobiles and the furnishing of needed supplies.

Hibbard vs. Edward, 84 Atl. 437.

#### Kind of Building.

In the absence of some ordinance or statute, any kind of building may be used as a public garage. In all the cities, however, and in a great many of the smaller cities and towns ordinances

and local regulations have been passed restricting the erection of buildings to be used for garage purposes, and providing that they may not be erected within a certain number of feet of schools, hospitals, or other places where a large number of people are wont to congregate and, in most cases, also providing that they must be fireproof throughout and contain only cement floors, etc.

These ordinances are all constitutional, as it has been held in a great many cases that it is within the power of law-making bodies to make laws which will best tend to provide for public safety.

#### Liability for Injuries.

A garage keeper, of course, is liable for any injuries which occur to persons properly on his premises through the unsafe condition of the building or its equipment—just as a landlord is liable to his tenants for the unsafe condition of his apartment house, or a shop keeper is liable to his customers for the unsafe condition of his store.

Besides being required to pay damages in a case where a person is injured through the garage keeper's negligence in not keeping his premises in a safe condition, he is also liable in a like case where property is injured. In one case a garage keeper had contracted to store an automobile and keep it in a certain place in his shop; shortly after that he removed it to another part of his shop. During the course of a snow storm the roof of the garage became heavily covered with snow and ice and finally collapsed, damaging the automobile. Its owner sued the garage keeper and was able to recover damages, first, because of his having moved the car to some other place than that specified in the contract and, second, because of his negligence in permitting the roof to become so heavily loaded that it fell down.

Pilson vs. Tiptop Auto Co., 136, Pac. 642.

As regards property in his custody, a garage keeper need only exercise that degree of cares which is required of anyone else who takes charge of property for hire; that is, as the court puts it, "the same degree of care a prudent man would take of his own property under the circumstances."

Chesley vs. Woods Motor Vehicle Co.. 147 Ill. App. 588.

Not long ago in New York City a motor car owner sent a \$2,500 automobile to a shop to have it equipped with a limousine body. While the car was being lowered in an elevator, the elevator dropped to the basement and smashed the automobile. The owner, of course,

sued the dealers and recovered a verdict for the worth of the machine. The dealers, however, appealed the case and the Appellate Court held that, as the elevator had been inspected regularly, and as it was not shown that the dealer had neglected to equip it with any proper device, or that he was negligent in any other way, the owner should not have recovered from the dealer and the case was thereupon reversed.

On other occasions, however, the garage owner has not fared so well. In one case one of his employes took out an automobile, after it had been repaired, for the purpose of testing it, and also to bring home another customer of the garage, who had just left his own automobile there for repairs. The employe wrecked the automobile and its owner sued the garage keeper and recovered judgment against him.

Roberts vs. Kinley, 132 Pac. 1180.

As was said in this case by the court, a garage keeper is a bailee for hire and is liable for loss from the negligent acts of himself or of his employes, when acting within the scope of their employment. He is bound to exercise reasonable care and diligence to keep safely any property left in his custody.

McLain vs. West Virginia Automobile Co., 79 S. E. 731.

And in a case where a car owner left his car in dead storage and returned 3 years after and found the body of the car broken and the upholstery motheaten, he was able to recover damages, when an expert testified that, under ordinary circumstances, the body of the car would not have been so damaged.

Winfheimer vs. A. T. Demarest & Co., 137 N. Y. S. 908.

(To be continued.)

#### Now They Smile at Ryus in Los Angeles.

In Los Angeles, H. D. Ryus, president of the Motor Car Dealers' Association, gets a funny smile as he flits up and down Automobile Row. He's a "speed cop," but that's only half the joke.

Chief of Police Sebastian recently appoined three dozen dealers and car owners special police to stop speeding and Ryus is chief of this special squad, which is some more of the joke.

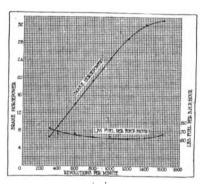
The rest of the smile is that two days after he was elevated to "the force" two motorcycle "cops." who either didn't know him or didn't care—probably both—chased him down Washington street and arrested him for exceeding the speed limit. They said he was going 30 miles an hour, but Chief Sebastian says that won't make any difference with his appointment.

# LONGUEMARE CARBURETTER DOES WELL UNDER TESTS

Laboratory Trials Show High Efficiency Over Wide Range of Speeds—Greatest Economy at Normal Speed.

A good driver can form a fairly accurate estimate of the general characteristics of a carburetter after a more or less extended road test, and can even figure, in a rough way, its comparative fuel consumption. When, however, really accurate data is needed, a laboratory test is necessary and, moreover, such a test will give accurately, in a few hours, information that could be obtained only roughly after months of road work.

So when the Longuemare Carburetter



LONGUEMARE CARBURETTER CURVE

Co.. New York City, desired to find out just what the Longuemare carburetter would do under given conditions, a test was made, under the official direction of the Manhattan Automobile Club, at the laboratory of Joseph Tracy, East Rutherford, N. J., where the club has arranged to have all similar tests conducted.

The carburetter, a model F. B. 34, 1¼ inch, was attached to a White four-cylinder motor having a bore and stroke of 3.75 and 5.125 inches, respectively, and the motor, coupled to a Sprague electric dynamometer, was run through a 6-hour period during which the speed was varied from 300 to 1.600 revolutions per minute. Horsepower and fuel consumption readings were taken at intervals of 15 minutes. No carburetter adjustments were made after the commencement of the run; the throttle was kept wide open at all times and the time of ignition was varied to give maximum power.

At the lowest speed, 300 revolutions per minute, the dynamometer indicated

6.6 horsepower and the fuel consumption was .72 pounds per horsepower hour. The speed was increased to a maximum of 1.600, when the horsepower developed was 33.38 and the fuel consumption .66 pound per horsepower hour. Maximum fuel economy was attained at 1,200 revolutions, the horsepower being 29.03 and the gasolene consumption .61 pound per horsepower hour. At 800 and 1,000 revolutions with the horsepower at 19.5 and 24.67, respectively, the consumption was .63 pound, and at 1,400 revolutions 32.27 horsepower, just above the point of maximum efficiency the consumption was .62 pound, this indicating an excellent fuel efficiency over the normal working range of the engine.

As the accompanying reproduction shows, the curve is a good one, being almost straight up to 1,400 revolutions per minute. The motor was run without a muffler, the exhaust passing through a length of 21/2-inch pipe. A Mea magneto generated ignition current for the Bosch plugs. In the Longuemare carburetter the fuel, which is controlled by the conventional float and valve, is sprayed by two jets, only one of which is in action when the motor is running at low speed. A compensating chamber is provided to ensure a normal flow of fuel when otherwise there would be a tendency to starve the motor.

#### Three Want Chicago 'Bus Franchises.

The number of applicants for a franchise to operate motor omnibuses on the streets of Chicago having grown from one to three, the State Public Utilities Commission has set the hearing down for March 10.

The first applicant was the Chicago Automobile Transportation Co., promoted by Edward F. Dunne, Jr., son of the governor of Illinois, and backed by Richard W. Meade, president of the Fifth Avenue Coach Co., of New York City; R. A. Mandelik, of the London (Eng.) General Omnibus Co., and James M. Carples, of the Daimler Import Co., of New York City.

Another applicant is the Chicago Motorbus Co., of which R. R. and S. L. Conklin, of New York City, are the backers; the third is not incorporated, but has the backing of Frederick Bartlett, a real estate man, and Benjamin H. Marshall, an architect, both of Chicago. The commission has stated that no one company will get exclusive privileges.

While the applicants are awaiting the hearing, Judge Clarence N. Goodwin, of Chicago, has suggested that the city establish and operate a 'bus service of its own.

# Advanced Maintenance

S O L D E R I N G — P A R T O N E

By George Fernwell

The term soldering may be considered to apply to various processes of practically uniting two metal surfaces by interposing a third metal (or alloy) in a molten state, in such a manner that when the latter (interposed metal) is allowed to cool, the three metals are united as one.

The term solder in a generic sense may be, and is, to a limited extent, applied to the interposed metal, in a range of soldering processes of varying characters, involving different metals, temperatures, and compositions of solder.

To be precise at the risk of being painful, it may not be strictly correct to allow it to be inferred that two metals are joined directly to, and in actual contact with, each other. Obviously this latter is not the case, as, however thin the interposed film of solder may be, it prevents actual mutual contact of the metal surfaces being connected.

#### Soldering Requirements.

The fundamentals common to all soldering processes are:

1—That the solder should melt and become a liquid at a lower temperature than that at which either of the metals to be joined would melt.

2—The metal surfaces to be united must be heated locally at least to a degree at which the third metal or solder would melt and become a fluid.

3—The third metal or solder must be subjected to a similar degree of heat to cause it to melt and become liquid.

4—The surfaces to be joined by solder must be perfectly clean—that is, free from grease, tarnish, or oxidization.

5—To prevent oxidization of the cleaned metal surfaces, as a result of heating, the surfaces to be soldered must be coated before heating with what is called a flux.

6—To facilitate the uniting of the metals with the solder, a further application of flux is necessary after sufficient heat has been applied to the metal surfaces and to the solder.

The metals which can be united with solder are tinned iron, galvanized iron, tin, zinc, iron, steel, cast iron, cast steel, brass, bronze, copper, pewter, and lead.

#### ANNOUNCEMENT

Motor World with this issue begins a new department, Advanced Maintenance. This is written solely for the benefit of repairmen, whether in the repair shops handled by dealers, in garages or in shops where repair work only is carried on.

This department will from week to week take up from a practical viewpoint: the facts of repairing that the repairman, who is to win, must understand.

George Fernwell, the author, has had more than 20 years' practical experience in the repairshop, and for 15 years has been doing much high-class motor car repairing. His experience is supplemented with sound study in the latest in the repairing art. He combines science with practise in his work. He does not write from hearsay but from practical experience. The facts he states can be incorporated into your everyday repairing.

The first installment covers but a fraction of what the author has to say on soldering. It will be followed by well-illustrated articles on brasing, welding, and the many difficult repair jobs that the motor car repairman has to wrestle with.

Repairmen are invited to write this department asking any questions on which they desire up-to-date information. These questions will be answered free of cost in this department. Write distinctly and sign your full name.

and the various alloys of the above metals.

The strength of even a properly fitted and soldered joint may be considered as not being equal to successfully resisting prolonged vibration or any severe mechanical strain, or in the case of a union being soldered to a pipe, the adhesion of the film of solder cannot be relied upon to resist considerable force such as may be applied by, for instance, a stilson wrench.

Solder should not be used where the

metal parts are to be subjected to a temperature above 212° Fahr.

Everyone who has mastered the difficulties of soldering probably appreciates how success depends upon compliance with a series of apparently trifling rules of procedure.

#### Apply the Instructions.

The practical application of these instructions will save the workman considerable vexation and failure if he will follow even the apparently trifling recommendations regardless of how unnecessarily fussy they may appear.

For use on cleaning the surface repairs without regard to finished appearance, a three-cornered scraper, Fig. 1, will effectively answer all requirements. For repairs of polished surfaces of lamps, radiators and other parts of a motor car in which it is desired to have some regard for the appearance of the finished job, a scraper such as is shown in Fig. 2 would be a necessary part of the equipment, in addition to the three-cornered scraper.

#### Cleaning the Surface.

Cleaning a metal surface to prepare it for soldering, when using a blunt scraper is a tedious, slow and unpleasant job, and is so slovenly as to be painful to witness. When used for removing superfluous solder from a surface to be polished, a scraper which has been ground. but not honed, will make scratches in the metal surface. This is due to the minutely serrated cutting edge produced by the emery wheel or grindstone and the acute cross-sectional angle of the cutting edge, A, Fig. 1. A scraper ground and then honed, C Fig. 1, has its cutting edge relieved by a facet or beveled edge of the cross-section of the scraper edge at or near the edge is made considerably less acute than the angle formed by grinding only.

The importance of the careful preparation of the scraper for this work can be readily noted, if it should be desired to remove all superfluous solder from the repaired surface of a radiator, or a lamp in order that the repaired part may be given a high polish.

It will be found next to impossible to prevent an improperly sharpened scraper from making deep scratches in the metal surface. These latter would be glaringly apparent, should the scraped surface be afterwards highly polished, unless all the scratches made by the improperly sharpened scraper are removed by the slow process of cutting them out with several grades of emery cloth. A further objection to the latter is, the perceptible hollows which emery cloth causes in the surface when polishel, if its application is limited to the metal surface immediately adjacent to the scratches. If emery cloth must be used it should be applied equally to as large an area as possible adjacent to the scratches.

#### Soldering Irons or Coppers.

On the other hand, with a properly sharpened and honed scraper, the merest film of metal can be removed when this is desired, and leave a satiny surface free from scratches. It should be obvious that with the latter condition of a metal surface to be polished, the use of emery cloth would be unnecessary and even detrimental to producing a thoroughly finished job, and that an economy is effected in time which will amply repay the care expended in preparing, and acquiring skill necessary for the proper use of these tools.

Just why a soldering copper is called a soldering iron, is not quite apparent, but as it is customary to do so, there is little to be gained by insisting upon either term being used.

For general soldering work, in a motor car repair shop or private garage, what is known as a 2-pound iron—that means that a pair weighs 2 pounds—would be very suitable when used in conjunction with a gas blow-pipe or a gasolene torch.

#### Heat Soldering Surfaces.

When soldering to repair, for instance, the case of a radiator, near the trunnions or supports, the heat from a small soldering iron is rapidly dissipated through the mass of metal adjacent to the point of repair. An essential to perfect soldering is the heating of the surfaces to be united to a temperature at which solder will melt. This can be done effectively by a soldering iron on such work as repairing lamps or other car accessories of small mass or light weight compared to a radiator.

A radiator is a construction designed to rapidly dissipate heat, and the application of additional heat to the metal adjacent to the repair is required to supplement the limited capacity of the small soldering iron to impart heat. The additional heat can be applied with a gasolene torch but more effectively with a gas blow-pipe, but either must be used with a realization of the danger of melting many of the numerous soldered joints in a radiator.

#### Get the Iron Ready.

Soldering irons when needed for use must be thoroughly cleaned, and well tinned—that is, coated with solder—at each one of the four faces near the point. Any one unaccustomed to their use is more than likely to let them repeatedly become overheated, so that the coating of solder each time is burned off, making it useless to attempt to solder until the soldering iron is properly retinned.

To do this, the soldering iron which is so overheated as to have lost its coat of solder should be taken in its overheated condition and placed in a vise, where all four of the triangular faces of the point are filed bright, especial care being taken to remove the wire edge or burr which filing will cause, along each of the corners of the pyramid formed at the point of the soldering iron. This latter precaution is one of those seeming trifles which scarcely any one thinks about, but which have considerable effect upon the successful use of the soldering iron. Immediately the filing is done, the point of the iron is dipped quickly in and out of a solution which may be soldering fluid bought ready for use, or chloride of zinc, or a solution of sal-ammoniac and water. Upon withdrawing the soldering iron from the solution, should the filed faces quickly tarnish or discolor, the soldering iron is then still too hot for tinning. To cool it sufficiently for the latter purpose, dip it quickly in and out of water. Rapidly refile the tarnished faces until they are bright once more,

and again dip the soldering iron in the solution.

If it comes out untarnished, apply solder so that a little is melted on each of the four faces at the point, not necessarily covering the entire filed surface, and again dip the soldering iron into the solution. Being at the proper heat, it will then be thoroughly and brightly coated with solder—that is, it will be tinned ready for use.

#### A Hurry-up Job.

Haste is imperative in refiling and tinning the overheated but rapidly cooling soldering iron. If, after dipping the filed faces at the point in the solution, the faces are untarnished, and yet solder will not melt and adhere to them, too much time has been consumed in filing, so that the copper head has become too cool. If this has happened, the soldering iron must be reheated and filed as before.

To prepare a new soldering iron for use, heat it to a dull red, file the four faces smoothly at the point to the form of a pyramid, and do not neglect to file the four corners of the pyramid, and then proceed to tin the iron as described.

#### Some Good Advice.

The loss of time and the vexation entailed by having frequently to file and retin soldering irons because of continual overheating, is one of the harrassing difficulties a beginner experiences in growing accustomed to their use. It would repay the trouble if the soldering iron were heated so that, by frequent withdrawals of the soldering iron from the gas stove, and dipping in the solution, it might be noted just when the iron had become sufficiently overheated as to have commenced to burn or discolor the coating of tin on the point.

(Continued next week.)

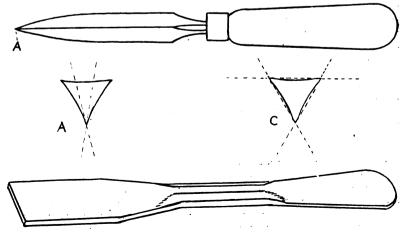


FIG. 1—THREE-CORNERED SCRAPER FOR ROUGH FINISHING AND CROSS SECTIONS
OF IT. FIG. 2—USEFUL TOOL FOR SOLDERING WORK

### BLAZE OF GLORY OPENS COLUMBUS MOTOR CARNIVAL

Red Rire and Brass Bands Serve to
Attract Crowd Despite Inclement Weather — Fifty-five
Dealers Exhibit.

Red fire, brass bands, many and varicolored streamers of incandescent lamps and much gaily tinted bunting combined to best the elements which threatened to mar the opening of the annual automobile carnival of the Columbus (O.) Automobile Trades Association on Saturday evening last, February 28th; and the conglomeration succeeded in "pulling" a crowd to the "row," despite the inclement weather. The carnival, which embraces some 45 dealers who are displaying 55 different makes of cars in their brightly lighted store windows, will hold forth for one week, until Saturday evening next, March 7th. The vehicle dealers represented are:

F. E. Avery, Packard, and Detroit electrics; Auto Inn & Exchange, King; Barr Motorcycle Co., Franklin; Patdorf & Steel, Paterson; Brasher Motor Co., White, and Waverly electrics; Central Auto Vehicle Co., Paige and Jeffery; Cummins Auto Sales Co., Krit; Curtin-Williams Co., Cadillac; F. P. Corbett, Marion and Detroiter; Everett Auto Sales Co., Maxwell; Ford Motor Co., Ford; Franklin Cycle & Supply Co., Cole; Gaither Auto Sales Co., American, Wahl and Chandler; Grimm Sales Co., Lozier and Maxwell; Kaiser Motor Car Co., Hupp; Oscar Lear Auto Co., Oakland and Buick; Mercer Auto Sales Co., Mercer; Ohio Auto Sales Co., Regal and Ford; Peerless Auto Co., Peerless; P. H. Rogers, Haynes; Standard Motor Car Co., Hudson; Snyder Auto Co., Allen; S. W. Schott, Empire and Brush; G. E. Thomas Co., Mitchell; Twyman Motor Co., Studebaker; Broad-Oak Auto Co., Chalmers, Pierce-Arrow, Reo and Saxon; Craighead Motor Sales Co., Ohio; Miller Machine & Mould Works, Premier; Jacob Renner, Ford and Richmond; Winton Auto and Repair Co., Winton; Murnan Taxi Co., Speedwell; Spring Street Garage Co., Velie.

### Single Show for Cincinnati.

According to plans which are now being worked out, it is altogether probable that Cincinnati will have but one show next year, instead of two, for the breach between the two factions of local dealers is in a fair way to being healed. Incidentally, the joint show probably will

be held the first week in December in lieu of late in February, as heretofore.

The pleasure car section of the Automobile Dealers' Association show, which was opened on the 21st ult. in Music Hall, was brought to a close seven days later and was succeeded by the commercial vehicle section, which was housed in the same building, Monday morning, March 2nd. The trucks were wheeled out on Wednesday night, 4th inst. Those who exhibited were as follows:

Wm. Sommerkamp, Chase; White Motor Co.. White; Hanauer Automobile Co.. Pierce-Arrow; Cincinnati Motor Truck Co., Universal; Chas. Shiear Motor Car Co., Federal and Hupmobile; Bowling Green Motor Car Co., Modern; Leyman-Buick Co.. Standard and Buick; Citizens' Motor Car Co., Packard; Cincinnati Automobile Co., Pope-Hartford; Motor Sales and Service Co., Auto Car; Heilman Motor Car Co., Commerce; Kruse Motor Car Co., Kelly-Springfield.

#### Planning Ohio Dealers' Association.

Plans for the organization of a State Automobile Trades Association have been promulgated by the Columbus Automobile Trades Association, Columbus. O., and letters are to be sent, inviting all the local associations in Ohio to affiliate; the movement is in charge of the following committee: P. F. Minnoch, manager of the Columbus Ford branch; L. M. Brown, secretary of the Ohio Automobile Association; J. P. Gordon, president of the J. P. Gordon Co., an accessory manufacturer; H. J. Schwartz, president of the Columbus Automobile Trades Association and Standard Motor Car Co.

#### Ohio Amends "Famous" Warnes Law.

In the hope that a new suit of clothes will make the Warnes automobile law more satisfactory to the Supreme Court of Ohio, the legislature has amended it; it was previously declared unconstitutional because it levied heavy license fees and turned a good portion of them into the general fund, thereby making the law a revenue measure and unconstitutional

The amendment provides that any surplus above the cost of administration shall be applied to good roads instead of to the general fund. In this form another attempt will be made to have the law stand.

### Pulcher Sails on European Visit.

Martin L. Pulcher, vice-president and general manager of the Federal Motor Truck Co., Detroit, Mich., left for an extended trip abroad on Saturday, 28th ult.

## UTICA DEALERS SHOW IN GREEN AND WHITE SETTING

Twenty-one Display 28 Makes of Cars in the State Armory— Accessories Are Shown at Eighteen Booths.

Utica's annual automobile show under the auspices of the Utica Automobile Dealers' Association opened in the State Armory in that Empire State city on Monday evening last, March 2; the exhibit will hold the boards until next Saturday evening, March 7th. The walls of the drill hall are appropriately though simply disguised with green and white coverings and the ceiling girders are concealed with an imitation sky in the form of a blue canopy. Twenty-eight different makes of automobiles, among them one electric, are shown by the 21 dealers who hold space; accessories are shown by a dozen and a half supply dealers.

The complete list of vehicle exhibitors follows:

Utica Saxon Motor Co., Inc., Saxon; H. W. Skinner Motor Car Co., Packard and Chandler: Daiker Motor Sales Co., Maxwell and Winton; King Motor Agency, King; Chas. H. Childs Co. Jackson; Frank E. Henabray Motor Co., Oakland; I. R. Gardinier, Empire and Pullman; H. D. Crim Automobile Co., Studebaker and Cole; Robert F. Payne. Velie: Beatty-Buick Sales Co., Buick: Utica Motor Car Co., Cadillac; Otis Motor Sales Co., Reo and Ford; Fiscus & Harris, Auburn; John M. Weaver, National and Stutz; Regal Agency. Regal; Schiller & Creswell, Detroit electric; Franklin Motor Car Co., Franklin: Geo. M. Redding, Allen and Haynes; Metz Motor Sales Co., Metz; Overland Genesee Garage, Overland; Stevens-Duryea Co., Stevens-Duryea.

#### "Bad Check Man" Working in Cincinnati

A "bad check man" has been operating among the automobile concerns in Cincinnati, O., and thus far has passed several bad pieces of paper, the amount realized in each case, however, being small.

The Automobile Tire & Repair Co., of 13th and Race streets, of which Paul J. Schneider is the proprietor, accepted a check and gave \$3.94 in change when the man ordered an inner tube sent to his "residence." The check was signed "The Burton Range Co." Several other firms have been victimized during the time the man has been in Cincinnati.

## EUCLID CYCLE-LIGHT CAR BUILT ON BIG CAR LINES

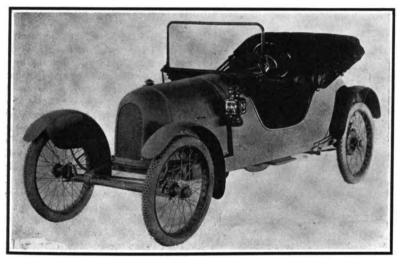
Four-Cylinder Air-Cooled Motor
Develops One Horsepower for
Every 50 Pounds Weight—
Shaft Drive, Big Tires.

Because the machine is neither excessively light nor very heavy and because it is in many respects a combination of both car and cyclecar features, the Euclid Motor Car Co.. Broad street. New York, has called its machine, which just has been brought forth, a "cycle-light car." That the Euclid is a real little car is clearly indicated by the accompany-

1½ inches in diameter and 3 inches long at the front and 3½ inches long at the rear, where the weight of the flywheel is carried; the bearings are of die-cast nickel babbit.

A constant-level lubrication system is employed, including, of course, a pump, which is of the plunger type. Oil is sent under pressure to the shaft and connecting rod bearings, while splash is relied upon to lubricate the cylinders and the wrist-pins. Ignition is by high-tension maneto located at the front of the motor.

The cleanness of design of the engine is due in no small measure to the fact that the intake and exhaust manifolds are cast integral, eliminating part of the usual outside piping. The cylinder



EUCLID "CYCLE-LIGHT" CAR WITH 4-CYLINDER AIR-COOLED MOTOR

ing illustration; the fact is made even more plain by the specifications.

The new machine is built from designs by E. A. Cameron, and under the circumstances it is quite logical that the motor should be of the air-cooled type, with four cylinders. Drive is through a two-speed progressive gearset mounted as a unit with the motor and a propeller shaft with one universal joint to the rear axle which is of the semi-floating type. The main frame is of channel steel the front axle of drawn steel tubing with drop-forged ends and the springs quarter elliptics. The wheelbase is 100 inches and the tread 40 inches.

Looking at the machine more in detain, it develops that the motor, which is rated at 15 horsepower at 1,000 revolutions per minute, has cylinders of 3 inches bore and 3½ inches stroke and valves in the heads actuated by rockerarms. The two-bearing crankshaft is of sturdy construction, having journals

and piston castings are of nickel iron, with an alloy of 20 per cent. of steel to increase their toughness. To the efficiency of the head valve system, as well as other features of the motor, is given the credit for the economical running of the machine, which, the makers state, will cover from 35 to 45 miles on a gallon of gasolene.

The integral construction of the manifolds not only simplifies the appearance of the motor, but it performs a more practical office. There is a constant interchange of heat between the exhaust and the incoming fuel gas, so that the latter is thoroughly vaporized while the exhaust gas is to some extent cooled. The fresh gas circulates around the exhaust valve chambers, keeping down their temperature.

A feature of construction that has unmistakeable merit is the employment of removable cylinder heads. Valves and manifold come away with the heads, too.

so that not only is it a simple matter to look for and to remove carbon from both cylinders and heads, but the grinding of valves and the performance of other work is greatly facilitated.

The clutch is of the leather-faced cone type, and, housed in the flywheel, it is so constructed that there is no end thrust. The rear axle has a four-pinion differential and is fitted with annular ball bearings throughout. Both service and emergency brakes act on drums on the rear hubs, the service brake being of the external contracting type and the emergency brake internal expanding.

That back-lash in the steering gear even of a light machine is an unmixed evil has been recognized in the Euclid car, which is fitted with an adjustable gear of the rack-and-pinion type. The steering wheel column is sharply raked and carries the throttle and ignition levers on a sector under the wheel: knuckles and steering arms are heavy drop-forgings. Both front and rear wheels are 28 inches in diameter and are of wire, as might be expected. A feature that is rather noticeable is that the tires are 3 inches in diameter, which is quite large when the weight of the car-775 pounds-is considered. The tires are

Sheet steel is used in the construction of bodies, the metal lending itself very well to the design selected, with curved rear section and in-drawn hood front. The cowl is carried well back and not only serves to give the car an excellent appearance, but houses the gasolene tank, which provides for 8 gallons of fuel. The upholstering is in leather, stuffed with hair and backed by springs.

The price of the car, which is \$445. includes an up-to-date equipment, with lamps, windshield, top and so on. The top has the usual complement of side curtains for protection in bad weather; and, speaking of protection, the wide mudguards, with "aprons" in front, should not be overlooked. The high power of the Euclid car—practically a horsepower for each 50 pounds of car weight—gives hill-climbing ability of a high order, while on direct drive it is said to be capable of running from 3 to 50 miles an hour.

#### Horsepower Rating Extraordinary.

Incongruous though the practice of giving automobiles double horsepower ratings may seem when the figures are in the ordinary ratios, such as 25-30, or 40-50, the limit seems to have been reached in the power designation of one of the Austrian Daimler cars, which is fitted with a motor rated at 27-80 horsepower.

### STANDARDS PROPOSED FOR TIRE LOADS AND BOLTS

Standards Committee of S. A. E. Seeks to Eliminate Confusion in Tire Capacity—Tire Retaining Bolts Discussed.

At the last meeting of the Truck Standards Division and the Commercial Car Wheels Division of the Standard Committee of the Society of Automobile Engineers, which was held at society headquarters in New York on Tuesday, 3rd inst., a fair start was made to eliminate much of the confusion which now exists with regard to the carrying capacity of solid rubber tires, and the number of bolts required to fasten the tires securely in place on the wheels.

With regard to the carrying capacity of tires, it was demonstrated that several different tables of capacities have been issued by different companies, the result being that according to one maker's table a tire of a certain size will carry a certain load but according to another maker's table, the same load is all wrong for the tire size. Conflicting load carrying capacities are confusing alike to the designer, the manufacturer, the dealer and the user, and it is sought to bring about a standard table of capacities and tire sizes. The findings and recommendations of the division will be passed on to the Standards Committee and the Council, and if approved by these bodies will become recommended practice.

The discussion covering the number of bolts that should be used to fasten solid tires in place brought out the fact that there is practically no unanimity of opinion on the subject; some makers require one number of bolts through the wheel felloe to hold the retaining band in place and other makers require another number. By way of reducing this chaotic condition to one of order it is proposed to recommend the use of three numbers of bolts for given sized wheels, the suggested numbers being as follows:

For 26-inch wheel: 10, 15 or 20 bolts; 28-inch, 30- and 32-inch wheel: 12, 18 or 36 bolts; 34-, 36- and 40-inch wheel: 14, 21 or 42 bolts.

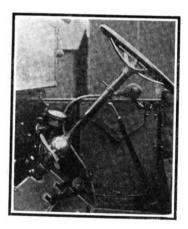
Different makes of tires have required different numbers of bolt holes, due to the fact that in some the tire retaining flange secured by these bolts has little work to perform, whereas in other makes of tires there is a constant tension on this flange and consequently more bolts are required. With the three different

numbers of bolt holes in the different sized wheels, it would be possible to attach any tire without the necessity of drilling new holes. For example, a 26-inch wheel may have the tire of one make held on by 10 bolts, and another tire with 15 bolts and another with 20

bolts. Where are number of holes in the felloe is greater than the number of bolts needed, the other holes are filled or plugged. The steel wheel manufacturers were represented at the meeting and they are desirous of meeting all requirements in this matter.

Develops Pedal Steering Control.

By way of permitting the driver of a car to rest his biceps occasionally, or to use his hands for purposes other than



GILLIAM FOOT STEERER

steering the vehicle, the Gilliam Mfg. Co., Canton, O., has developed an ingenious mechanism which makes it possible for the operator to control the direction of the car with his foot, thus leaving both hands free temporarily. As the accompanying illustration makes plain, the device consists of a formed pedal which attaches to the bottom of the steering column, to which it is connected through the intermediary of suitably arranged gears. Directly the operator's foot is placed upon the pedal, the steering wheel automatically is disengaged and the control thereafter is through the pedal; similarly, immediately the operator's foot is removed from the pedal the gears are shifted, throwing the pedal out of engagement and connecting the steering wheel to the steering mechanism. It is pointed out by the inventor that the "auxiliary steering gear," as it is styled, possesses the advantage that it permits the operator to drive with his hands in his pockets during cold weather.

## GASOLENE-ELECTRIC CARS DISCUSSED BY ENGINEER

S. A. E. Metropolitan Section Meeting Brings Out Several Interesting Facts — How "Hammer Blow" Affects Bearings.

Although gasolene electric vehicles have not yet come into really extensive use in America, that they bid fair to increase considerably in numbers in the not far distant future when their advantages become better known, seemed to be the concensus of opinion of those who attended the last meeting of the Metropolitan Section of the Society of Antomobile Engineers which was held at society headquarters on Thursday night last, 29th ult.

In dwelling upon the "softness" of drive of the gasolene-electric vehicle, and its flexibility, which features, by the way, are considered to be among its most important advantages, J. R. Breese, Jr., let in much light upon the causes of the rapid deterioration of motor bearings in some of the commercial vehicles with which he had had experience. The failure of the bearings, he said, finally had been attributed to the hammer blow which is delivered to the crankshaft of the motor when a heavy load is started from the standstill or when changing gears on a grade, or when the wheels sink into the roadway.

The gasolene-electric, he thought, should go toward the elimination of this trouble, and the experience of others made plain that such is a fact. By way of making clear this point. Breese cited an invention of his own whereby he had succeeded in prolonging materially the life of motor bearings. Instead of mounting the truck body directly and solidly to the chassis, it was mounted on a series of large balls in cups. so that the body could move a fraction of an inch either sidewise or fore and aft at the instant the clutch was let and the vehicle commenced to move. A pencil arranged to touch a paper slip traced an oval graph, proving that the body actually did move, and it was this movement, in his opinion, which softened the blow upon the crankshaft hearings.

The action of the gasolene-electric transmission, it was pointed out permits just such a softening of the hammer blow upon the motor bearings for it is impossible to start a gasolene-electric vehicle with a jolt, and, furthermore, as there are no gears to shift, the torque is practically constant.

## RECENT DEVELOPMENTS in ACCESSORIES

#### Valve Reseater that is Adjustable.

The making of a really good valve reseating tool, involving, as it does, a high order of milling cutter work and fitting, is not a task to be undertaken lightly—which, doubtless, is one reason why the market is not "flooded" with such things. One of the small group is the Healy valve reseater, manufactured by the Healy Tool & Appliance Co., Brocton, N. Y., and handled by Ralph Waldt, New York, who is Eastern distributer.

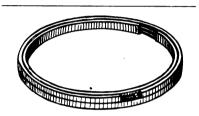
The accompanying illustration of the tool is almost sufficient to make the method of using it clear. The larger unit is the tool for reseating the valve proper, and is shown with a valve in position for truing. It is unusual in several details. The sleeve provided as a guide for the valve stem has two bearings, one close to the valve head and the other far out on the stem: these bearings are adjustable for different sizes of stems and to make possible close fitting of worn stems. The cutters, held in three holders, are adjustable and reversible. one end being at an angle of 60 degrees and the other 45 degrees. If valves are in bad shape a roughing cutter can be used for the first cut, and the finishing done with another cutter, ensuring accuracy and smoothness.

The circular cutters are, of course, for truing the valve seats, and are of Brown & Sharp make. The mandrels for the cutters are tapered to correspond with tapers in the cutter holes, so that perfect fit and accurate centering are assured. Not only will the cutters true up seats. but they will remove shoulders and ridges. Three cutters and mandrels are included in the set, and an extra valve roughing tool. The list price is \$30 for the complete set.

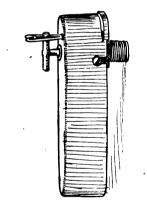
#### . Piston Ring Minus Lap Joints.

The problem of keeping gases under high pressure from leaking from the right side of the piston to the wrong side, and so wasting power, has been in process of solution ever since the first wooden piston was packed with hemp; doubtless it will be a more or less live issue when the last motor makes its last revolution. Certainly it is an interesting matter at present, and not the least ingenious of the many packing devices is the "Sta-Tite" packing ring manufactured by the Sta-Tite Packing Ring Co., St. Louis, Mo., which is shown in the accompanying illustration.

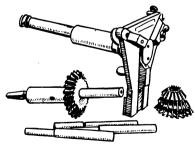
Briefly, the Sta-Tite ring consists of a main ring, which fits in the piston groove



STA-TITE PISTON RING



WIARD'S AIR VALVE



HEALY VALVE RESEATER

and fills it completely, and six segments mounted on the main ring. The segments are placed so as to form a double ring, "breaking joints," being retained in their proper relative positions by pins. There are no lap joints of the usual

type, and the segments, having long bearing surfaces on each other, are said to prevent leakage. The rings are made to the exact size of the cylinder bore and the pressure on the cylinder walls is equal at all points.

#### Air Valve Operated by Motor's Heat.

A glance over the files of Motor World for the last couple of years might easily lead to the impression that inventors of auxiliary air supplying devices for assisting carburation had put into metal about every possible idea on the subject and that the field was about worked out, so far as new ideas are concerned. That this is the wrong impression, however, is made clear by the accompanying illustration, which shows the automatic air valve that just has been placed on the market by the Wiard's Automatic Air Valve Co., Ypsilanti, Mich.

The peculiarity of the valve is that it is attached to the intake manifold a little above the carburetter, adjusted to the motor and then left alone, for it is actuated by the heat of the motor and nothing else. There is a cone-shaped valve controlled by a thermostat which, of course, is directly influenced by the heat of the engine and needs no attention. When the proper adjustment for the individual motor has been found the adjustment is locked by a spring wire device.

#### Combined Lock and Kick Switch.

The results that can be obtained by the clever combination of switches and circuits are nothing short of remarkable when the designing is done by one who knows how; and it is evident that the Lock-All switch, which is distributed by A. J. Picard & Co., 1720 Broadway, New York, was evolved by an electrical expert who knew his business.

While the accompanying illustration shows the outward form of the switch, it by no means indicates its functions. The case sets in the dashboard with the circular plate flush with the surface. In the center there is a knob, which, to be exact, is a push-switch. On each side there are smaller button switches and under it a keyhole which indicates the presence of a Yale lock.



The little switch buttons control the lights individually, the ignition circuit and the electric horn. Any combination of lights can be used by manipulating the buttons, and, when the switches have been set, a turn of the key in the lock makes the buttons entirely ineffectivethe lights cannot be tampered with. Thus, the driver can set his switches for burning the side lights, cut off the ignition current from the battery and ground the magneto, and then turn the key in the lock and feel perfectly safe in leaving the car standing, for it is, of course, inoperative.

Further, the driver can instantly extinguish his headlights and simultaneously turn on his side lights by a single kick of the big switch knob-which, incidentally, is made so that it can be kicked with impunity. And when he wants the headlights again, another kick puts out the side lights and causes the headlights to glare. This is an easy way of making things less difficult for drivers and others who have to face the lights, and is an act of courtesy that is appreciatedall the more because it is uncommon. The switch lists at \$12.

#### Assists Carburetter by Heating Fuel.

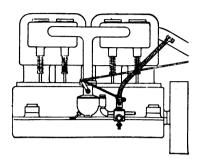
Devices for warming the air passing through a carburetter are common enough-in fact, their name is legion. It is not quite so usual, however, to find motors equipped with means for heating the raw gasolene before it enters the carburetter. But there are such things, as is evidenced by the accompanying illustration of the R. O. C. "superheater," which is handled by the National Economic Supply Co., 1777 Broadway, New York City.

The principle of the device is simple; a small chamber containing gasolene is surrounded by a jacket through which part of the exhaust gases circulate. The fluid is raised to such a temperature that it vaporizes completely, the makers state. as soon as it emerges from the spray nozzle, though it remains liquid as long as it is in the piping. The superheater practically is part of the gasolene main line, just as is the strainer or separator. It is placed as close as possible to the carburetter and a connection from the exhaust pipe led to it, being piped in at the top, while the gas escapes at the bottom. The gasolene fills the central chamber in the device, passing in at one side and out at the other. The heater can be attached to any carburetter or mixing valve and the only precaution needed is to pipe the exhaust in at the top, and not the bottom. The list price of the heater, which the makers state is

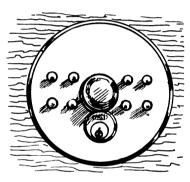
suitable for any engine up to 75 horsepower, is \$5.

#### Warming the Private Garage.

When a man is warmly dressed he doesn't mind going out into the cold air on a fine day, giving the crank a whirl



S. R. O. GASOLENE HEATER



LOCK-ALL COMBINATION SWITCH



AUTO-HOT GARAGE HEATER

and shooting down the road for a spin; the frosty air merely adds zest to the jaunt. But when it comes to bringing the car back to a cold, clammy garage and doing work that necessitates have hands and in which there is not sufficient exercise to keep the blood galloping-that's something else again, and it is not considered an unalloyed pleasure. Besides, it is next to impossible to do decent work with benumbed fingers and a mind that dwells on the comfort of the warm house rather than on the job in hand.

Evidently, the Kanneborg Roofing & Ceiling Co., of Canton, O., knows something of such matters, for it has placed on the market the garage heater shown in the accompanying illustration, styling it the "Auto-Hot" garage heater. The fuel is ordinary illuminating gas and the flame is enclosed so that there is no danger of fire. There is an enormous radiating surface, so that about all the heat generated is utilized. A control valve permits close regulation and there is an inspection door in the casing. The shape is such that little space is occupied, and the makers characterize the heater as being absolutely safe.

#### Effects of Wrong Lamp Voltages.

While some persons are satisfied to know that the lamps used for car illumination should be of a voltage suitable for the battery used, there are others who want to know why. The reason is simple.

If the rated voltage of the lamp is higher than it should be it will give a poor light because it is designed to offer high resistance to high pressure, and with the low voltage battery there is insufficient pressure to overcome the resistance. On the other hand, if the lamp is of low voltage as compared with the battery, the low resistance will permit the current to flow at such a high rate that the filament will flash up brililantly and then burn out; the greater the discrepancy in the voltage the sooner the end will come.

### Taking Care of Shaft Centers.

In working on small shafts, spindles or other turned parts that have lathecenters in their ends, the greatest care should be taken not to batter up the ends or in any way impair the centers which, if preserved, may be used to mount the part in the lathe for truing up or other purposes.

### Oil that Facilitates Chipping.

In doing heavy chipping, especially in the more ductile and fibrous metals, it is a great help to have a wad of waste on the bench soaked with oil on which the edge of the chisel can be rubbed occasionally.



## PISTON WEIGHT IN THEORY AND PRACTICE

## Effects of Heavy Reciprocating Parts At High Speed—Foreign Methods of Constructing Light-Weight Pistons of Steel, Malleable Iron and Cast Iron—Variety in Experiences and in Opinions.

Looking at the matter in a general sort of way, it is evident that the development of the automobile motor on the further side of the Atlantic Ocean is proceeding along lines that diverge considerably from the lines that are being followed here, and the consequence is—that is, one of the consequences—that different objects are being sought in making detail investigations and experiments.

Most notable among the characteristics of the foreign type of motor are small cylinder bores and high rotative speeds, and the tendencies in this direction lead inevitably to research with extreme lightness of reciprocating parts as the objective point, for, to go to extremes for an illustration, it is evident that a high-speed motor with heavy reciprocating parts would literally shake itself to pieces, and even if it did not it would in all probability seriously damage itself by excessive friction, if nothing else.

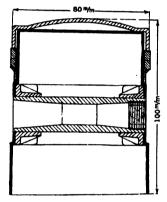
#### Reasons for Lightening Pistons.

In some respects the desirability of lightening up reciprocating parts is a little bit of a puzzle—that is, from the point of view of the man who isn't in the habit of wading through mathematical mazes as a form of recreation. On the face of it, the reciprocating parts would seem to balance each other, for there is a piston going up for each piston going down, and if the weights are the same, which they usually are in engines that are good for anything, apparently there should be perfect balance. Further, while there is an expenditure of energy in imparting motion to and in accelerating the reciprocating parts-more energy when the parts are heavy than when they are light-it is reasonably clear that the energy is absorbed by the crank in bringing the reciprocating masses to rest. So things would seem to balance each other pretty well.

But here's where mathematics, used as a microscope, brings into the focus of mental vision a string of facts that make all the difference in the world. In truth, after digesting the more important facts one is tempted to wonder why all makers of motors are not engaged in a scramble

to see who can get rid of the most weight in the parts that have to be started and stopped twice every revolution of the crankshaft.

For the sake of making the figuring easy, take an engine with a 6-inch stroke running at 1,000 revolutions per minute, having a piston weighing 3 pounds. The speed of the piston in its travel is maximum.



BUILT UP CONSTRUCTION



FORD MALLEABLE PISTON

mum at the middle of the stroke, at which point the stored energy in the 3 pounds of metal is (skip the formula) 208 pounds. Now, a 208-pound man sitting on a piston couldn't be expected to do much harm to the parts or impose much strain on the bearings. And it is true that this force is easily taken eare of, and it is, of course, well known that 1,000 revolutions a minute is not by any means a high speed even for a big engine. But when the speed is doubled and carried up to 2,000 revolutions, what

happens? Why, the force is quadrupled, becoming 832 pounds, which is something very different, and if the speed is run up to 3,000 revolutions per minute the force is 9 times the original 208 pounds, or 1,872 pounds.

Thus it becomes clear that, even if this one point was the sole consideration, it would be necessary to decrease that 3 pounds very materially before it would be practicable to run the speed up very high. Assuming that the weight of the piston can be brought down to 16 ounces, the force developed at 1,000 revolutions will be but 69 pounds; at 2,000 revolutions per minute 277 pounds; and at 3.000 revolutions per minute 624 pounds. And, be it said, a 16-ounce piston for an engine with a 6-inch stroke is not only possible, but is practicable—in fact, such pistons have been made.

#### Some Bad Effects of Vibration.

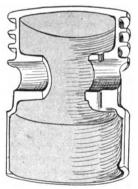
As has been intimated, however, there are other good reasons for lightening the reciprocating parts of high-speed engines. Two pistons may be, and usually are, in almost perfect static balance; but the fact remains that they do not reciprocate in the same planes, though they are connected to the same shaft. And when one piston is delivering its force in an upward direction the other is delivering its force in a downward direction-the energy of the expanding charges is being ignored-and there is produced what is termed a "couple" which tends to bend the crankshaft first in one direction and then in the other. This cannot well be balanced, and as a consequence is a source of possible vibration, whipping of the shaft, bearing wear, and so on. Of course, the less weight there is in the reciprocating parts the less stored energy there will be to create these disturbing couples.

Following the logical line, the connecting rods come in for next consideration. The upper end of the connecting rod is practically part and parcel of the piston, reciprocating with it and having comparatively little oscillatory motion, while the big end, swinging with the crank, adds to the weight of the crank, to all intents and purposes. Again there



#### MOTOR WORLD

arises the fact that the connecting rod forces, though balanced statically, act in different planes and create unbalanced couples. In the case of the big end the item of centrifugal force is an exceedingly important one. Adhering to the engine with 6-inch stroke and assuming a big-end weight of 31/2 pounds, at a speed of 2,000 revolutions per minute, the big end will develop a centrifugal force of 1,200 pounds-a straight pull of well over half a ton tending to bend the crankshaft and, what is perhaps of more immediate consequence, tending to squeeze the lubricating oil from between the bearing surfaces. Just what is gained by taking off weight is indicated by the fact that for each pound taken off the big end the centrifugal pull will be cut down by more than 300 pounds, still asuming a speed of 2,000 revolutions per minute, of course. On the other hand, every pound added entails an additional force of 20 horsepower. Verily, the things that happen, unseen and



CROSSLEY CAST PISTON

usually unconsidered, inside the crankcase are of the ultra-strenuous order.

So much for the more or less theoretical aspect of the matter and the conclusions drawn from the figures. When it comes to actual pistons and connecting rods, it appears that not only have there been built exceedingly light parts for racing cars—in fact, it is almost the invariable rule that foreign racing motors have steel pistons—but pressed steel pistons and connecting rods and malleable iron pistons have been built, and used with more or less success—though there are differences of opinion as to the entire desirability of steel for pistons.

A case in point that has a homelike setting is that of the special lightweight malleable iron pistons made by the English firm of James. Talbot & Davison for Ford motors, the piston being shown in one of the accompanying illustrations. The standard Ford piston, of cast iron, weighs, complete with rings, 3½ pounds.

The malleable iron piston, complete, weighs 2½ pounds, while a steel piston, made by the same firm for the same motor, weighs, complete, 1 pound 6½ ounces. These are known as the Zephyr pistons.

#### Steel vs. Cast Iron Pistons.

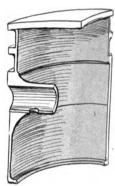
The Zephyr pistons have been made to replace the cast iron pistons of various standard engines, and the comparative weights are of no little interest. The larger the piston, the greater is the proportionate saving in weight by substituting pressed steel for cast iron. A piston 60 millimeters in diameter-a trifle less than 23% inches-weighs 12 ounces in cast iron and 811/16 ounces in steel, a saving of 35/16 ounces. A piston 90 millimeters in diameter-3 17/32 inches -weighs 311/2 ounces in cast iron and 1813/16 ounces in steel, a difference of 1211/16 ounces. And a fairly large piston of 145 millimeters in diameter-511/16 inches-weighs 1021/4 ounces in cast iron and 63 ounces in steel, which saves 391/4 ounces. In all cases the pistons are weighed complete with rings and pins.

To refer back to the result of using lighter pistons in Ford motors, it figures out that the force of acceleration with the standard cast iron pistons, which weigh 31/2 pounds each, is 256 pounds per square inch at 1,000 revolutions per minute and 1,036 pounds per square inch at 2,000 revolutions per minute. With malleable iron pistons weighing 21/4 pounds each the pressures for the same speeds are 155 and 620 pounds, respectively, and with steel pistons weighing 1 pound 61/8 ounces each, 101 and 404 pounds per square inch, respectively. It is clear that the lessened pressure on the bearings means longer wear and less liability of lubrication troubles, to say nothing of smoother running, quicker acceleration and longer holding on high gear.

But while steel pistons are used abroad to a considerable extent and have advantages that cannot be gainsaid, there are not a few makers who do not believe in them at all and who do not hesitate to say so. The Crossley company, for instance, fitted all its engines with steel pistons for two successive years, and then abandoned them to return to cast iron. According to their experience, the sole advantage of the steel piston is its lightness. Opposed to this, they state. the running of steel on cast iron is not all that it might be and, further, the coefficient of expansion of steel, being greater than that of the cast iron of which cylinders are made, is the cause

of complications. Because of the expansion the steel piston cannot be fitted as closely as a cast iron piston, and the consequence is that at slow speeds when the piston is not very hot, it is liable to be sufficiently loose to cause "piston slaps" in the cylinder. If the piston is fitted close enough to be free from the slapping at low speeds it is liablet to seize at high speed, when well heated up.

Confronted with difficulties that, according to their experience, made steel pistons undesirable, the Crossley people, still with a lively appreciation of the advantages of light weight, succeeded in producing pistons of cast iron that are as light as steel pistons and yet sufficiently strong for the purpose. The Crossley cast iron piston shown in the accompanying illustration is 80 millimeters (about 31% inches) in diameter and weighs 17 ounces with pin and three rings. There is no drilling and the relieved part is comparatively short.



WELDED STEEL TYPE

Of course, the experience of a single firm is insufficient to dispose entirely of such an important question as the relative merits of steel and cast iron pistons; but the Crossley case is interesting not only because steel pistons were good enough to use for two years, but because it was found possible to make such exceedingly light cast iron pistons. Meantime there are other firms making steel pistons which are supplied to motor makers. Among them is the Oxygen Welding Works, which, as might be inferred, uses the oxy-acetylene welding process in building up steel pistons and turns out, for example, a 4-inch piston weighing 21 ounces-which is not the minimum weight, but is the weight of a very strong piston. Nearly a dozen British motor firms are said to use these pis tons, as well as some American makers A quarter section of a built-up piston is shown in one of the accompanying pic-

## **BOSTON DEALERS' SHOW** MORE LOCAL THAN EVER

Lists More Than Well Filled-Things Hitherto Not Shown Will Be Uncovered-Exhibitors for Truck Show.

The Boston Dealers' Association's show, which opens its pleasure car section Saturday next, is to be more than ever a local affair, as the following list of accessory exhibitors makes plain. The list of car exhibitors appeared in Motor World last week.

A. C. C. Oil CoProvidence, R. I.
Acme Torsion Spring Co
Ætna Life Insurance CoBoston
Ajax Trunk & Sample Case CoNew York
American Express CoBoston
American Lava Co., The Chattanooga, Tenn.
American Lava Co., TheChattanooga, Tenn.
American Motor Equipment CoBoston American Storage Battery CoCambridge, Mass.
American Storage Battery Co Cambridge, Mass.
American Time Co. Manually Manual
American Tire CoMontello, Mass.
Andrews Co., Chas. GBoston
Arnold, N. B Brooklyn, N. Y.
Auto Electric Trouble StationBoston
Auto Electric Trouble Station
Automatic Appliance CoBoston
Automatic Tire Rest CoKansas City, Mo.
nationalic The Rest Co
B. & R. Shock Absorber Co Philadelphia, Pa.
Baker, W. AMelrose, Mass.
Barnstead Water Still CoBoston
Darinstead Water Still Co
Bascom, Geo. RBoston
Baxter Side Car Co Cambridge, Mass.
Diadment & T. b
Blodgett & JohnstonBoston
Bonned & Co., The D. HenryCambridge, Mass
Boston Tire & Rubber CoBoston
Bowser Co., Inc., S. FBoston
Boyd, F. ShirleyBoston Braender Rubber & Tire CoNew York
Brander Bubber & Tire Co New Verle
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Brock Rubber Co., A. SBoston
Ruffington & Co. C. A. New York
Burn Boston Battery & Mfg. Works Boston Calnan, Jas. P West Upton, Mass. Campbell Co., A. S Boston Cape Cod Power Dory Co Wareham, Mass.
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Fryer Co., Chas. HProvidence, R. I.	Standard Auto Supply CoBoston
Gage, J. PrescottYonkers, N. Y.	Standard Oil Co. of N. YBoston
Green & Swift CoBoston	Standard Woven Fabric Co.,
Gurnard Mfg. Co Beverly, Mass.	.So. Framingham, Mass.
G. I. M. Vulcanizing CoBoston	Stevens, W. HBoston
Harding Specialties Co., TheBoston	Sutcliffe, C. T. W
darding, W. ABoston	S. & A. Mfg. CoBoston
	Sharrer Patent Top Co., Inc New York
Havoline Oil CoBoston	Texas Co., TheBoston
Hillman Auto Supply Mfg. CoBoston	Tiffany Co., D. CBoston
Holden, Geo. NBoston	Tohey, Wm. LE. Boston
Holtzer-Cabot Electric Co Brookline, Mass.	Tolman Mig. Co
Holt & Beebee CoBoston	
Hopewell BrosNewton, Mass.	Treat Hardware CoLawrence, Mass.
Houk Co., Geo. WBuffalo, N. Y.	Turner, HarrisonLawrence, Mass.
Hutton Co., Fred WBrockton, Mass.	Underhay Oil CoBoston
Hydraulic Oil Storage & Eng. CoNew York	Universal Lubricating Co., TheCleveland, O.
Indian Refining CoBoston	Universal Refining CoBoston
International Metal Polish Co New York	Van Dorn Electric Tool CoBoston
Invader Oil CoNew York	Varnerin & PaddonRoxbury, Mass
Jackson Co., The Chas. ABoston	Walker Litho. & Pub. CoBoston
Jager Engine Co	Wayne Oil Tank & Pump CoBoston
Jeffery-Dewitt Co	Whitten-Gilmore Co., TheBoston
Johns-Manville Co., The H. WBoston	Wilson Co., John VBoston
	Yankee Motor Economy Co., TheBoston
Justice Co., A. R	Zenith Carburetor CoDetroit, Mich.
Kanner, SamuelNew York	Zetterman Machinery Co., Inc
Kelleher Co., J. JDorchester, Mass.	, , , , , , , , , , , , , , , , , , ,
Kenney, A. EBoston	On the 17th, following the closing of
Keating & DeckerNewton, Mass.	
Keystone Lubricating CoBoston	the pleasure car show, the truck show
Kilgore Motor Starter CoBoston	opens-the only big commercial vehicle
Kilham, J. FBeverly, Mass.	show scheduled for this year. It is prob-
Knauss, EdwardBoston	•
La Pointe Co., The J. N New London, Conn.	able that there will be additions to the
Lawrence & Stanley Co Boston	list of exhibitors, which is as follows:
Leland-Gifford Co	nst of exhibitors, which is as follows:
Lewis Mfg. Co Bridgeport, Conn.	Abrams Co., MyerCambridge, Mass.
Linscott Supply CoBoston	Alma Motor Truck Co Detroit, Mich.
Maddocks Co., Inc., H. RossBoston	American Tire Co
Mark Motor Supply CoBoston	Atterbury Motor Car CoBuffalo, N. Y.
Marburg BrosNew York	Autocar Co
Marathon Tire & Rubber Co	Baker Motor Sales CoCambridge, Mass.
Max Machine Co	Boyd, F. ShirleyBoston, Mass.
Myers BrosNew York	Buick Motor Car CoBoston, Mass.
Middleboro Auto Exchange Middleboro, Mass.	Chase Motor Truck CoSyracuse, N. Y.
Miller Chas F New York	Chicago Preumatic Tool Co. Chicago III
Miller, Chas. E	Chicago Pneumatic Tool CoChicago, Ill.
Mohawk Rubber CoAkron, O.	Eldridge, W. EBoston, Mass.
Mohawk Rubber CoAkron, O. Motor Car Mfg. CoIndianapolis, Ind.	Eldridge, W. E
Mohawk Rubber CoAkron, O.  Motor Car Mfg. CoIndianapolis, Ind.  Motor Accessories, IncBoston	Eldridge, W. EBoston, Mass. Federal Motor Truck CoDetroit, Mich. Fischer Co., C. JCambridge, Mass.
Mohawk Rubber Co	Eldridge, W. E
Mohawk Rubber CoAkron, O. Motor Car Mig. CoIndianapolis, Ind. Motor Accessories, IncBoston Motor Parts CoBoston Motor Supply Shop, IncBoston	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I.
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The Elyria, O.
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The. Elyria, O. General Motors Truck Co. Boston
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The. Elyria, O. General Motors Truck Co. Boston I. H. C. Co. of America. Somerville, Mass.
Mohawk Rubber Co	Eldridge, W. E
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The. Elyria, O. General Motors Truck Co. Boston I. H. C. Co. of America. Somerville, Mass. International Harvester Co. of America, Somerville, Mass.
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes. Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The. Elyria, O. General Motors Truck Co. Boston I. H. C. Co. of America. Somerville, Mass. International Harvester Co. of America, Somerville, Mass. Jeffery Co., Thomas B. Kenosha, Wis.
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Mohawk Rubber Co	Eldridge, W. E
Mohawk Rubber Co	Eldridge, W. E
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The Elyria, O. General Motors Truck Co. Boston I. H. C. Co. of America. Somerville, Mass. International Harvester Co. of America, Somerville, Mass. Jeffery Co., Thomas B. Kenosha, Wis. Keating & Decker. Newton Mass. Kinney Mfg. Co. Boston Knox Automobile Co. Boston Knox Automobile Co. Boston Kelly-Springfield Truck Co. Cambridge Mass. Lauth-Juergens Motor Car Co. Fremont, O. Linscott Motor Co. Boston Little Giant Truck Co. Boston Maddocks, H. Ross. Boston Maddocks, H. Ross. Boston Mattapan Motor Car Co. Mattapan Mass. Milliken, E. H. Boston
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The. Elyria, O. General Motors Truck Co. Boston I. H. C. Co. of America. Somerville, Mass. International Harvester Co. of America, Somerville, Mass. Jeffery Co., Thomas B. Kenosha, Wis. Keating & Decker Newton Mass. Kinney Mfg. Co. Boston Knox Automobile Co. Boston Knox Automobile Co. Boston Kelly-Springfield Truck Co. Cambridge, Mass. Lauth-Juergens Motor Car Co. Fremont, O. Linscott Motor Co. Boston Locomobile Co. of America Boston Locomobile Co. of America Boston Maguire Co., J. W. Boston Maddocks, H. Ross. Boston Mattapan Motor Car Co. Mattapan, Mass. Milliken, E. H. Boston New York
Mohawk Rubber Co	Eldridge, W. E
Mohawk Rubber Co	Eldridge, W. E
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The Elyria, O. General Motors Truck Co. Boston I. H. C. Co. of America. Somerville, Mass. International Harvester Co. of America, Somerville, Mass. Jeffery Co., Thomas B. Kenosha, Wis. Keating & Decker Newton, Mass. Kinney Mfg. Co. Boston Knox Automobile Co. Boston Knox Automobile Co. Boston Kelly-Springfield Truck Co. Cambridge, Mass. Lauth-Juergens Motor Car Co. Fremont, O. Linscott Motor Co. Boston Little Giant Truck Co. Boston Maguire Co., J. W. Boston Maddocks, H. Ross. Boston Mattapan Motor Car Co. Mattapan, Mass. Milliken, E. H. Boston Myers Bros. New York Packard Motor Car Co. Detroit, Mich. Parcel Post Equipment Co. Cambridge Mass. Palmer-Moore Co. Syracusc, N. Y.
Mohawk Rubber Co	Eldridge, W. E
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Mohawk Rubber Co	Eldridge, W. E
Mohawk Rubber Co	Eldridge, W. E
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The Elyria, O. General Motors Truck Co. Boston I. H. C. Co. of America. Somerville, Mass. International Harvester Co. of America, Somerville, Mass. Jeffery Co., Thomas B. Kenosha, Wis. Keating & Decker. Newton, Mass. Kinney Mfg. Co. Boston Knox Automobile Co. Boston Knox Automobile Co. Boston Knox Automobile Co. Boston Little Giant Truck Co. Cambridge, Mass. Lauth-Juergens Motor Car Co. Fremont, O. Linscott Motor Co. Boston Little Giant Truck Co. Boston Maddocks, H. Ross. Boston Maddocks, H. Ross. Boston Mattapan Motor Car Co. Mattapan, Mass. Milliken, E. H. Boston Myers Bros. New York Packard Motor Car Co. Detroit, Mich. Parcel Post Equipment Co. Cambridge, Mass. Palmer-Moore Co. Syracuse, N. Y. Pierce-Arrow Motor Car Co. Boston Reo Motor Gar Co. Lansing, Mich. Rockwell, Inc., C. P. Boston Selden Motor Vehicle Co. Rochester, N. Y. Stewart Motor Corp. Buffalo, N. Y. Sewell Cushion Wheel Co. Detroit, Mich. Spedolene Lubricant Co. Malden, Mass. Standard Motor Truck Co. Detroit, Mich. Spedolene Lubricant Co. Detroit, Mich.
Mohawk Rubber Co	Eldridge, W. E
Mohawk Rubber Co	Eldridge, W. E
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The Elyria, O. General Motors Truck Co. Boston I. H. C. Co. of America. Somerville, Mass. International Harvester Co. of America, Somerville, Mass. Keating & Decker. Newton, Mass. Kinney Mfg. Co. Boston Knox Automobile Co. Boston Knox Automobile Co. Boston Knox Automobile Co. Boston Klly-Springfield Truck Co. Cambridge, Mass. Lauth-Juergens Motor Car Co. Fremont, O. Linscott Motor Co. Boston Little Giant Truck Co. Boston Maguire Co., J. W. Boston Maguire Co., J. W. Boston Maddocks, H. Ross. Boston Mattapan Motor Car Co. Mattapan, Mass. Milliken, E. H. Boston Myers Bros. New York Packard Motor Car Co. Detroit, Mich. Parcel Post Equipment Co. Cambridge, Mass. Palmer-Moore Co. Syracuse, N. Y. Pierce-Arrow Motor Car Co. Detroit, Mich. Rockwell, Inc., C. P. Boston Reo Motor Gar Co. Lansing, Mich. Rockwell, Inc., C. P. Boston Selden Motor Vehicle Co. Madden, Mass. Standard Motor Truck Co. Detroit, Mich. Spedolene Lubricant Co. Malden, Mass. Standard Motor Truck Co. Detroit, Mich. Stanley Motor Carriage Co. Newton Mass. Twombly Car Corp. Avondale, N. J. Universal Motor Truck Co. Detroit, Mich. Stanley Motor Truck Co. Detroit, Mi
Mohawk Rubber Co	Eldridge, W. E. Boston, Mass. Federal Motor Truck Co. Detroit, Mich. Fischer Co., C. J. Cambridge, Mass. Forbes, Walter J. Boston Fryer Co., Chas. H. Providence, R. I. Fuller, Alvan T. Boston Garford Co., The. Elyria, O. General Motors Truck Co. Boston I. H. C. Co. of America. Somerville, Mass. International Harvester Co. of America, Somerville, Mass. International Harvester Co. of America, Somerville, Mass. Jeffery Co., Thomas B. Kenosha, Wis. Keating & Decker Newton Mass. Kinney Mfg. Co. Boston Knox Automobile Co. Boston Knox Automobile Co. Boston Kelly-Springfield Truck Co. Cambridge, Mass. Lauth-Juergens Motor Car Co. Fremont, O. Linscott Motor Co. Boston Little Giant Truck Co. Boston Little Giant Truck Co. Boston Maguire Co., J. W. Boston Maguire Co., J. W. Boston Mattapan Motor Car Co. Mattapan, Mass. Milliken, E. H. Boston Mattapan Motor Car Co. Detroit, Mich. Parcel Post Equipment Co. Cambridge Mass. Palmer-Moore Co. Syracusc, N. Y. Pierce-Arrow Motor Car Co. Boston Reo Motor Car Co. Boston Reo Motor Car Co. Lansing, Mich. Rockwell, Inc., C. P. Boston Selden Motor Vehicle Co. Rochester, N. Y. Sewell Cushinon Wheel Co. Detroit, Mich. Spedolene Lubricant Co. Malden, Mass. Tamodhy Car Corp. Avondale, N. J. Chiversal Motor Truck Co. Detroit, Mich. Spedolene Lubricant Co. Cambridge Mass. Twombly Car Corp. Avondale, N. J. Universal Motor Truck Co. Detroit, Mich. Stanley Motor Carriage Co. Newton Mass. Twombly Car Corp. Avondale, N. J. Universal Motor Truck Co. Cambridge Mass. Walter Motor Truck Co. New York
Mohawk Rubber Co	Eldridge, W. E

Spedolene Lubricant Co...........Malden, Mass

Standard Auto Supply CoBoston
Standard Oil Co. of N. YBoston
Standard Woven Fabric Co.,
. So. Framingham, Mass.
Stevens, W. HBoston
Sutcliffe, C. T. W
S. & A. Mfg. CoBoston
Sharrer Patent Top Co., Inc New York
Texas Co., The
Tiffany Co., D. CBoston
Tobey, Wm. LE. Boston
Tolman Mfg. Co
Treat Hardware CoLawrence, Mass.
Turner, HarrisonLawrence, Mass.
Underhay Oil CoBoston
Universal Lubricating Co., TheCleveland, O.
Universal Refining CoBoston
Van Dorn Electric Tool CoBoston
Varnerin & PaddonRoxbury, Mass
Walker Litho. & Pub. CoBoston
Wayne Oil Tank & Pump CoBoston
Whitten-Gilmore Co., TheBoston
Wilson Co., John VBoston
Yankee Motor Economy Co., TheBoston
Zenith Carburetor CoDetroit, Mich.
Zetterman Machinery Co., IncBoston

Abrams Co., MyerCambridge, Mass.
Alma Motor Truck CoDetroit, Mich.
American Tire Co
Atterbury Motor Car CoBuffalo, N. Y.
Autocar CoBoston, Mass.
Baker Motor Sales CoCambridge, Mass.
Boyd, F. ShirleyBoston, Mass.
Buick Motor Car CoBoston, Mass.
Chase Motor Truck CoSyracuse, N. Y.
Chicago Pneumatic Tool CoChicago, Ill.
Eldridge, W. EBoston, Mass.
Federal Motor Truck Co Detroit, Mich.
Fischer Co., C. J
Forbes, Walter JBoston
Fryer Co., Chas. H
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Fuller, Alvan TBoston
Garford Co., TheElyria, O.
General Motors Truck CoBoston
I. H. C. Co. of AmericaSomerville, Mass.
International Harvester Co. of America,
Somerville, Mass.
Somerville, Mass.

Jenery Co., Inomas D
Keating & DeckerNewton, Mass.
Kinney Mfg. CoBoston
Knox Automobile CoBoston
Kelly-Springfield Truck Co Cambridge, Mass.
Lauth-Juergens Motor Car CoFremont, O.
Linscott Motor CoBoston
Little Giant Truck CoBoston
Locomobile Co. of AmericaBoston
Maguire Co., J. WBoston
Maddocks, H. RossBoston
Mattapan Motor Car Co Mattapan, Mass.
Milliken, E. HBoston
Myers BrosNew York
Packard Motor Car CoDetroit, Mich.
Parcel Post Equipment CoCambridge, Mass.
Palmer-Moore CoSyracuse, N. Y.
Pierce-Arrow Motor Car Co Buffalo, N. Y.
R. & L. CoBoston
Reo Motor Oar CoLansing, Mich.
Rockwell, Inc., C. PBoston
Selden Motor Vehicle Co Rochester, N. Y.
Stewart Motor CorpBuffalo, N. Y.
Sewell Cushion Wheel Co Detroit, Mich.
Spedolene Lubricant Co Malden, Mass.
Standard Motor Truck Co Detroit, Mich.
Stanley Motor Carriage Co Newton, Mass.
Twombly Car CorpAvondale, N. J.
Universal Motor Truck Co Detroit, Mich.
Velie Motor Vehicle CoCambridge, Mass.
Walter Motor Truck Co New York
White Co., TheBoston
Whitten-Gilmore Co., TheBoston
Willys-Overland CoToledo, O.



1,080,128. Vehicle Wheel. John J. Van Iderstine, Kansas City, Mo. Filed Feb. 25, 1913. Serial No. 750,495. (Tire with pneumatic cylinder cushions.) 1 claim.

1,080,129. Spring Tire for Wheels of Vehicles. Charles Henry Vidal, Chiswick, England. Filed Aug. 29, 1911. Serial No. 646,667. (Tire with sectional jointed tread and supported springs.) 8 claims.

1,080,216. Fuel Pump for Internal Combustion Engines. Alfred H. Hoadley, Providence, R. I. Filed Dec. 22, 1911. Serial No. 667,281. (Fuelpump for injection type motors.) 6 claims.

1,080,253. Resilient Wheel Hub. Joseph W. Bready, Springfield, Mass., assignor of one-third to Charles D. Kenney, Springfield, Mass. Filed April 30, 1913. Serial No. 764,492. (Hub with internal springs and rocking arms.) 9 claims.

1,080,256. Automatic Headlight. Benjamin H. Brown, George W. Edwards, and Edmund T. Manwell, Marysville, Cal. Filed March 10, 1913. Serial No. 753,401. (Headlight turning with steering gear.) 4 claims.

1,080,264. Means for Producing Sound-Waves. Louis Euclide Cote, Ottawa, Ont., Canada, and Walter Furman Kelley, Ithaca, N. Y. Filed March 19, 1909. Serial No. 484,542. (Horn operated by rapid succession of gas explosions.)

1,080,281. Fluid-Operated Power-Transmission Mechanism. Charles Snow Kellogg, Montclair, N. J. Filed May 24, 1907. Serial No. 375,529. (Hydraulic change-speed system with rotary elements.) 6 claims.

1,080,282. Speed and Power Transmitting Mechanism. Charles Snow Kellogg, Montclair, N. J. Filed Feb. 13, 1908. Serial No. 415,691. (Hydraulic change-speed system with rotary and reciprocating elements.) 39 claims.

1,080,289. Combined Air Motor and Compressor for Starting Internal Combustion Engines. Harry A. Lord. South Pasadena, Cal. Filed May 23, 1912. Serial No. 700,347. (Piston-and-cylinder air pump and motor.) 5 claims.

1,080,295. Tire. John J. Patton, New oYrk, N. Y. Filed Feb. 14, 1913. Serial No. 748,359. (Solid tire on detachable rim.) 5 claims.

1,080,335. Engine-Starter. Frank Gahm, Streator, Ill. Filed Aug. 14, 1912. Serial No. 714,995. (Manually operated starter.) 7 claims.

1,080,337. Demountable Rim. Leo A. Gordon, Fall River, Mass. Filed June 12, 1913. Serial No. 773,313. (Rim with ratchet fastening and sectional filling wedges and blocks.) 6 claims.

1,080,377. (Spring-Wheel for Vehicles. John F. Sipe and Harry E. Sipe, New York, N. Y. Filed Dec. 7, 1909. Serial No. 531,762. (Wheel with coil springs between rim and spokes.) 5 claims.

1,080,377. Spring Wheel for Vehicles. John P. Sipe and Harry E. Sipe, New York, N. Y. Filed Dec. 14, 1909. Serial No. 532,978. (Wheel with coil aprings between rim and spokes.) 2 claims.

1.080,379. Spring Wheel for Vehicles. John F. Sipe and Harry E. Sipe, New York, N. Y. Filed Dec. 24, 1909. Serial No. 534,820. (Wheel with coil springs between rim and spokes.) 2 claims.

1,080,384. Means for Lifting and Turning Automobiles. McElmer Stewart, Kansas City, Mo., assignor. 1y direct and mesue assignments, to Automatic Tire Rest Co., Kansas City, Mo., a corporation. Filed April 28, 1913. Serial No. 764,029. (Four-wheel lifting jack with castors or rollers.) 11 clayus.

1.080.385. Tire for Vehicle Wheels. Herbert L. Stillman, Westerly, R. I. Filed Feb. 23, 1911. Serial No. 610.376. (Detchable solid dual tires and rim + 1 claim.

1,080,394. Tire-Chain. Jesse Weaver, Oakland,

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Neb. Filed April 14, 1913. Serial No. 761,014. (Tire chain with laterally projecting mud lugs.) 2 claims.

1,080,416. Tire. Wm. G. Chipley, Atlanta, Ga., assignor to Pneumatic Rim & Tire Co., Winmington, Del., a corporation of Delaware. Filed Aug. 31, 1912. Serial No. 718,120. (Tire with two annular air tubes and heavy overhanging tread.) 5 claims.

1,080,432. Vaporizer. Jos. Thomas Freestone, Liverpool, Eng. Filed Jan. 27, 1913. Serial No. 744,547. (Vaporizer for solid fuels.) 3 claims.

1,080,442. Automobile-Jack. Charles A. Hart, Findlay, O. Original application filed April 5, 1912, Serial No. 688,659. Divided and this application filed April 14, 1913. Serial No. 761,045. (Automatic jack with rocking standards.) 2 claims.

1,080,447. Tractor System for Motor Vehicles. Alfred H. Hoadley, Providence, R. I. Filed Feb. 14, 1913. Serial No. 748,302. (Motor and pivoted wheel mounted and swinging together.) 13 claims.

1,080,458. Motor-Car Screen. Jerome Francis Kennedy and Ernest Norbert Kennedy, London, England. Filed Oct. 20, 1911. Serial No. 655,656. (Folding, sliding and tilting windshield.) 3 claims.

1,080,482. Motor-Starting Device. Thos. J. Roberts, Atlanta, Ga. Filed Feb. 9, 1912. Serial No. 676,492. (Compressed air starter.) 5 claims.

1,080,494. Automatic Speed Indicating and Registering Device. Richard Star, U. S. Navy. Filed Sept. 30, 1912. Serial No. 723,158. (Speed ometer making time and speed records.) 8

1,080,495. Valve Gear for Internal Combustion Engines. Karl Steinbecker, Charlottenburg, Germany, assignor to General Electric Co., a corporation of New York. Filed March 13, 1912. Serial No. 683,500. (Valve mechanism for fuel injection motors.) 5 claims.

1.080,564. Auto-Jack. Charles Knudson and Evard J. Brumbach, Pontiac, Ill. Filed April 30, 1913. Serial No. 764,675. (Automatic jack for lifhting all four wheels.) 6 claims.

1,080,580. Automobile Wheel-Rim. Orson L. Pickard, Columbus, O. Filed Dec. 20, 1909. Serial No. 534,153. (Detachable rim with split ring.) 1 claim.

1,080,581. Apparatus for Raising Automobiles. James John Preece, Potchefstroom, Transvaal, South Africa. Filed Aug. 26, 1912. Serial No. 717,184. (Device for bodily lifting car to permit working underneath.) 1 claim.

1,080,589. Vehicle Signal. Edward Bruce Roedding and Gordon E. Roedding, Detroit, Mich. Filed May 19, 1913. Serial No. 768,584. (Visual signal for chauffeur.) 10 claims.

1,080,591. Front Wheel Drive and Steer for Motor Vehicles. John S. Rutkowski and Wm. T. Hutchinson, South Bend, Ind.; said Rutowski assignor to said Hutchison. Filed Sept. 23, 1912. Serial No. 721,481. (Gear-drive system for steering wheels.) 2 claims.

1,080,621. Resilient Wheel. Joseph Rene Ayotte, Chicago, Ill., assignor to Alexander Airless Auto Wheel Co., Chicao, Ill., a corporation of South Dakota. Filed March 18, 1912. Serial No. 684,368. (Wheel spokes.) 4 claims.

1,080,624. Driving of Motor Vehicles and Similar Motor Plants. Rudolf Diesel, Munich, Germany, assignor to Busch-Sulzer Bros.-Diesel Enine Co., St. Louis, Mo., a corporation of Missouri. Filed Sept. 19, 1910. Serial No. 582,653. (Divided-unit Diesel engine.) 1 claim.

1.080,630. Anti-Vibration Device for Vehicles. Edward V. Hartford, New York, N. Y. Filed Dec. 5, 1904. Serial No. 235,475. (Shock absorber with frictional resistance in one direction.) 13 claims.

1,080,631. Automobile Sign-Holder. Henry Osborne Havemeyer, Mahwah, N. J. Filed Dec. 27, 1910. Serial No. 599,587. (Adjustable E-cense holder.) 1 claim.

1,080,642. Starting Mechanism. Merle Machia Nut & Bolt Co., Inc., Bridgeport, Com., a bia Nut & olt Co., Inc., Bridgeport, Com., a corporation of New York. Filed Jan. 6, 1912 Serial No. 740,411. (Gear drive and roller clutch for starting systems.) 17 claims.

1,080,649. Spring Wheel. Abraham Morgaa, Independence, Mo. iFled Oct. 17, 1912. Serial No. 726,330. (Wheel with inner and outer sets of curved spring spokea.) 3 claims.

1,080,652. Spring-Cover. Arthur E. Peters. Westmont Borough, Pa. Filed May 13, 1913. Serial No. 767,246. (Flexible casing for less appring.) 7 claims.

1,080,653. Emergency Windlass for Automobiles. Leonard O. Pillabury, Crocker, S. D. Filed May 3, 1912. Serial No. 694,839. (Windlass attached to wheel hub.) 7 claims.

1,080,673. Traction Plow. Simon Belsager, Warroad, Minn. Filed Jan. 10, 1913. Serial No. 741,169. (Agricultural tractor with means for curvying bodily an automobile from which power is obtained.) 4 claims.

1,080,680. Motor Car Attachment. Andrew J. Crist, Amorita, Okla. Filed June 17, 1912. Serial No. 704,230. (Rollers for rear wheels of car for utilizing power.) 1 claim.

1,080,683. Tire Shoe Making Machine. Charles A. Edmonds, Akron, Ohio, assignor of one-half the Swinchart Tire and Rubber Company, Airos, Ohio, a Corporation of Ohio. Filed Dec. 5, 1912. Serial No. 735,080. (Tire manufacturing machinery.) 3 claims.

1,080,689. Gas Engine Starter. Chester E. Henning, Rudolph, Ohio. Filed Nov. 11, 1912. Serial No. 730,550. (Air valve.) 2 claims.

1,080,710. Lubricating Oil Conservation Attachment for Gas Engines. Champion Mayfeld, Brooking township, Jackson county, Mc. Filed Aug. 21, 1911. Serial No. 645,086. (Lubrication control by intake pipe vacuum.) 4 claims.

1,080,726. Means for Supporting Engines in Self-Propelled Vehicles. William Everett Ver Planck, Erie, Pa., assignor to General Electric Company, a Corporation of New York Field Apr. 23, 1912. Serial No. 692,747. (Motor suspension for gasolene railroad cars.) 14 claims.

1,080,745. Shock Absorber. George C. Beck, Spokane, Wash. Filed Jan. 28, 1913. Serial Na 744,660. (Friction disk shock absorber.) 4 claims.

1,080,748. Means for Supporting Engines. Heari G. Chatain, Erie, Pa., assignor to General Electric Company, a Corporation of New York. Field Apr. 23, 1912. Serial No. 692,584. (Spring engine suspension.) 5 claims.

1,080,749. Combined Motor Truck and Plow. Charles W. Clark, Chicago, Ill. Filed Jan. 6. 1911. Serial No. 601,212. (Means for attaching wheels in tilted position.) 9 claims.

1,080.761. Hydrocarbon Motor. Russell Haft.
Detroit, Mich., assignor, by mesne assignment,
to Packard Motor Car Company, Detroit, Mich.
a Corporation of Michigan. Filed Mar. 20, 1998.
Serial No. 484,833. (Packard magneto mounting.)

1,080,762. Hydrocarbon Motor. Russell Huf.
Detroit, Mich., assignor, by mesne assignments,
to Packard Motor Car Company, Detroit. Mich.
a Corporation of Michigan. Original application
filled Mar. 20, 1909, Serial No. 484,833. Divided
and this application filed Dec. 22, 1910. Serial No.
598,853. (Packard spiral gear magneto drive.) 8

1,080,765. Safety Device for Internal Combustion Engines. Hermann Lemp, Erie, Pa., assignor to General Electric Company, a Corporation of New York. Filed Dec. 30, 1912. Serial No. 739, 205. (Automatic fuel cut-out for injection type motors.) 2 claims.

1.080,772. Engine Starter. Charles H. Mres. Buffalo, N. Y. Filed Feb. 24, 1910. Serial No. 545,777. Renewed Mar. 8, 1913. Serial No. 753-075. (Compressed air starter.) 6 claims.



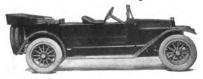
# ational



## The Winning Line of

VERY dealer and every motorist in the country have been waiting for the right Six-and here it is. They've wanted a Six selling at the right price—they've wanted a Six built by a manufacturer with years of experience—and a reputation for building a reliable product of the highest quality. That's just what this new National Six is -the right Six at the right pricebacked by the quality, faith, integrity and honesty of product that have made the National car worldfamous. The National Company were the first builders of successful 6-cylinder cars, making their first in 1905.

This new National is nothing short of a marvel. Beautiful, powerful, efficient, economical and, in fact, the climax of the National's success in car making since its pioneer beginning. It embodies all the National's internationally recognized principles of superiority. No other manufacturer has ever built its equal.

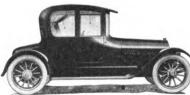


National 40. Seven Passenger Touring Car



This shows the beautiful, graceful lines of the cowl and hood of new National Six; instrument board, with everything convenient; control levers in center; left side drive; access to both front





National Six, Three Passenger Coupe

To see this new car is to desire it - to ride in it once is to determine to possess it.

#### First to improve European styles

Other makers have imitated the styles originated in Europe-but the National improves these advanced foreign designs. Nothing obstructs or spoils the continuous beauty of the long body lines. Both sides gradually converge toward the narrowed radiator, giving the whole car an original appearance and a "pointed" style. Smart slope from cowl to radiator.

#### Brief Specifications-National Six

Motor, six-cylinder, 334x54/-inch, cast en bloc. Tire pump, integral part of motor. Clutch, self-contained aluminum cone. Starting and lighting, electric two unit system. Transmission, aliding gear selective type, three speeds forward, one reverse. Gauge 56 inches. Oiling, crank case constant level, force feed, with gear driven pump. Ignition, high tension, dual magneto with storage battery. Tires, 36x45/c. Firestone demountable rims. Air pressure gasoline feed, generated by small pump in crank case. Capacity 23 gallons. Automatic carburetor. Two sets of brakes on 16-inch rear wheel drums. Bevel gear drive through straight line shaft with universal joints and torsion member. Full floating rear sale. Left side drive. Access all four wide doors. Single springs, front, special National cantilever construction. rear.

Equipment:—Top complete with side curtains and boot, ventilating rain vision wind shield, extra Firestone rim. electric lighting and starting sys-tems, 12-inch double bulb electric headlights, elec-tric license tail light, Warner speedometer, elec-tric horn, tools and jack.



NATIONAL MOTOR VEHICLE CO., Indianapolis, Ind., U.S.A.

## "SIXES" vs. "FOURS"

URING the past few weeks big newspaper space has been used for the purpose of defending the high-priced four-cylinder car. We are not surprised. Any four-cylinder car selling for more than \$1800 certainly needs

Whenever a tight shoe pinches, the wearer makes a wry face. And high-priced, four-cylinder shoes are pinching a number of feet pretty hard this season.

Let us examine the real situation of "Six" vs "Four."

Three years ago there were eleven builders of "Sixes" in the United States. Last year twenty-five companies produced "Sixes."

duced Sixes.

In 1914 thirty-seven of the forty-two leading manufacturers of motor cars build "Sixes."

Can such development be due to a fad or whim, as the builders of high-priced "Fours" say?

## High Priced Car Builders Found "Sixes" Superior

Found "Sixes" Superior

Seven years ago the Pierce-Arrow Motor Car Company built "Fours" only—"Fours" that were above reproach. Six years ago they added "Sixes" because the "Six" was demanded by those who wanted the utmost in a motor car. For five years the Pierce-Arrow has been building "Sixes" only. Not because the Pierce-Arrow has been building "Sixes" only. Not because the Pierce-Arrow has been building "Sixes" only. Not because the Pierce-Arrow has been building "Sixes" only. Not because the Packard Motor Company built only "Fours." Today Packard cars are built in "Sixes" exclusively. Not because the Packard "Four" was not good; for there were no better "Fours." But because Packard engineers and Packard owners found the "Six" mechanically superior to the "Four"—and the Packard Company had the courage to build the car which was proved best.

The Peerless Company abandoned "Fours" for "Sixes" exclusively, because those who paid Peerless prices demanded the superior smoothness, flexibility and silence of the "Six."

Seven years ago the Winton Company predicted the growth and popularity of the "Six." Since 1908 Winton cars have been built in "Sixes" only, because Winton found the "Six" superior to the "Four."

There is no question now about the Winton prediction being right. Recape this year practically appreciated to

There is no question now about the Winton prediction being right. Because this year practically every prominent maker, except one, selling cars above \$1250 is building "Sixes."

### Public Demand Forced the Development of the "Six"

The admitted mechanical superiority of the "Six" over the "Four" and the demand for this superiority on the part of those who are willing to pay any price for the motor car luxury forced these builders of high-priced cars into the six-

cylinder heid.

Practically all successful builders of "Fours," such as
Locomobile, Packard, Pierce-Arrow, Stevens-Duryea, Winten, Peerless, Buick, Hudson, Oldsmobile, Marmon, White,
Studebaker and Oakland, have been forced into the six-cylinder fold.

None of these companies changed their designs or spent thousands and thousands of dollars for new machinery and to market new types of cars just to satisfy a whim.

Is it possible that all these admittedly successful companies are wrong? Isn't it logical to suppose that the majority

nies are wrong? Isn't it logical to suppose that the majority is right?

Isn't it conclusive when practically all makers above \$1250 are devoting their brains, money and energy to "Sixes"?

Is it reasonable to suppose that the one company which dissents should be right against such overwhelming evidence? It has been our experience that, price being equal, people want the greater smoothness, silence, flexibility, lower up-keep, and superior mechanical luxury of the "Six."

They want it now and they always will want it. Pretty nearly all present owners of "Sixes" have at some time been owners of "Four." Ask them which is the better car—"Six" or "Four."

Did you ever know of a driver of a "Six" to go back to a "Four" of equal price?

Drivers of "Sixes" will tell you that there is something inherent in a "Six" that makes it better than a "Four," just as there is something inherent in a thoroughbred that makes him better than a horse of common blood.

### Don't Buy a Near "Six" When You Can Get a Real "Six"

The best known builder of high-priced "Fours" this year admits the superiority of the "Six" by using a mechanism which it is claimed will give to the "Four" some of the reognized superior qualities of the "Six."

How consistent of those with "Fours" to sell to decry "Sixes" in one breath and in the next tell you they have a device that makes a "Six" of their car—nearly!

The superiority of a "Six" over a "Four" exists in the motor—and can be obtained only through the motor. It can't be obtained through the transmission or the rear atle. The last resort of the four-cylinder advocate is that the "Four" is more economical than the "Six" a year or to It costs less to own a Chalmers Master "Six" a year or to It costs less to own a Chalmers Master "Six" a year or to

It costs less to own a Chalmers Master "Six" a year, or to drive it 20,000 miles, than to own a "Four" of equal size and power an equal length of time. We have had in the Chalmers factory every well known "Four" of \$1800 or over. We have them side by side with the Chalmers "Sixes" and here is what we have learned. what we have learned:

#### Power and Performance Considered "Six" Is More Economical Than "Four"

Because of its steady, uninterrupted flow of power, the "Six" is easier on tires and easier on every moving part than a "Four."

"But a 'Six' burns more gasoline," say four-cylinder build-

Again we say, that is not true.

Again we say, that is not true.

For any considerable distance the Chalmers Master "Six" can be run on as little gasoline as any "Four" of equal motor displacement and with equal car size. This is not merely advertising claim. We have proved this by actual tests. A leading builder of high-priced "Fours" is now announcing through the newspapers that he "has no intention of building a "Six." We believe this must be a welcome announcement to a great many intending buyers who had already finally made up their minds to buy a "Six" and had perhaps, been wondering whether this particular manufacturer would build one.

Now they have only to pick out the best "Six." They need no longer heaitate, anticipating that this particular builder may produce a "Six" Such statements of policy do much to clarify the public understanding of the motor car situation.

#### Chalmers Policy Is to Build Best Cars Possible at Chalmers Prices

As in the past, the Chalmers policy shall always be to build the most efficient, most up-to-date quality cars to sell at medium prices. The design of Chalmers cars shall be changed whenever adherence to that policy shall make

changed whenever adherence to that policy snan methanges necessary.

It is in pursuance of this policy of advancement that, having prored the "Six" superior to the "Four," the production of Chalmers factor in ow being concentrated on "Sixes."

It is just as impossible to stop the trend toward six-cylinder cars as it would be to dam the Niagara Falls. One builder of "Fours." in the \$200 class, claims more sales for his car than all makes of "Sixes" combined. This is positively exaggeration. There are leins sold today ther many "Sixes" as "Fours" at \$1500 or over. Crying against the "six" won't stop it—it only increases the desire for an investigation, and a comparison of the relative merits of "Fours" and "Sixes." That is all that we as makers of "Sixes" ask.

#### When You Buy a "Six" You Get the Newest Style and Best Investment

To you who are contemplating the purchase of a car this question of "Six" or "Four" is vital. We believe that only in a "Six" can you get a car which will give you the greatest satisfaction combined with safe investment. Why sink money in a car already but of still and the beams mute 50 in a car already out of style and bound to become more so each day?

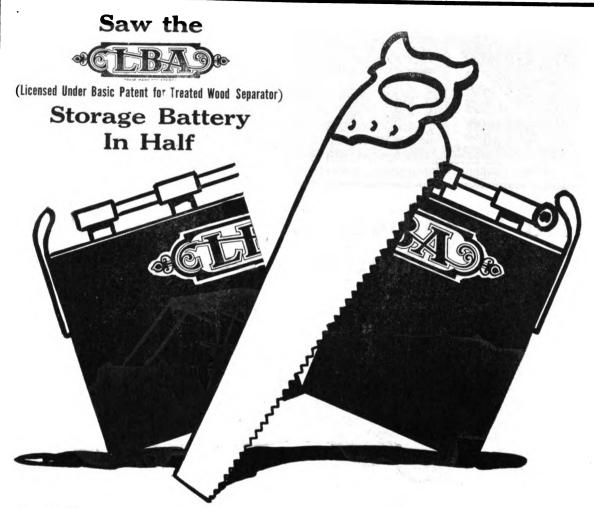
each day?

When you buy a "Six" you buy on a rising market. When you buy a "Four" you buy on a declining market.

Our proposition is simple. We say ride in "Fours" and ride in "Sete".

Ask your friends who have "Sixes" if they would go back to "Fours" we are sure you will want a "Six" after making such a test. Add have reached that conclusion we ask you to ride in all the different "Sixe". Then take the Chalmers Road Test. After this we are sure your parchase will be a Chalmers Master "Six."

## Chalmers Motor Company, Detroit



## And You Won't Be Surprised By Unpleasant Revelations

The attractive exterior of the is only excelled by its interior excellence.

Beauty is only skin deep. You may skin an battery—examine every detail of construction—piece by piece—and the closest scrutiny will fail to reveal any sign of careless workmanship or inferior materials.

The make-up of the active material—the know-how of construction are its only secrets.

Nothing is concealed or hidden and the pleasing exterior appearance of the is no more than a surface indication of its ample worth throughout.

## WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 West 52nd St.

Detroit Branch: 736, 738 and 740 Woodward Ave.

Chicago Branch: 2241 Michigan Ave.

San Francisco Branch: 243 Monadnock Bldg.

Indianapolis Branch: 438 and 439 Indiana Pythian Bldg.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

(88)



## No Conditions Can "Stump" an Atterbury Dealer



THIS is the first and greatest advantage you derive by selling Atterbury Trucks: You have a line so complete and comprehensive that you can suit conditions as you find them, regardless of what line of business your customer is engaged in, without selling a new traffic system along with the truck.

In addition to this, you have more in your favor with the Atterbury Line than with any other, viz:

An established reputation of eleven years of successful manufacture.

A line of trucks, including the three successful types of transmission — worm drive, chain drive, shaft drive.

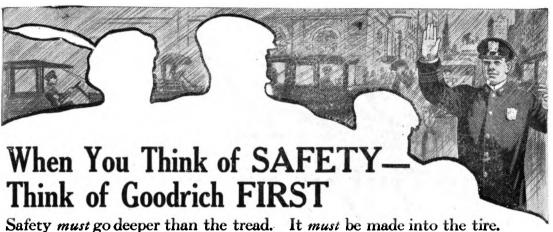
The best standards of equipment, including Continental motors, Brown-Lipe transmission, Timken axles, Bosch magnetos, Lavigne steering gears, Stromberg carburetors, etc.

The knowledge of the fact that Atterbury Trucks have won their reputation for economy in actual service extending over a longer period of years than any other can point to.

Write us today for our unusual agency proposition.

## THE ATTERBURY MOTOR CAR COMPANY

Black Rock, Dept. "M.W.," Buffalo, N. Y.



Goodrich Safety Treads are built on a foundation of safety and quality.

The strong rubber fingers clean and grip the road. They stop the skid before it starts. More than that—they help you start and stop and twist and turn and stop. Don't experiment any more. Save your nerves and save your money by using

## Goodrich Safety Tires

Best in the long Run





## One Out of Every Three

VERY third electric pleasure car sold today is a Detroit Electric. This fact gives undeniable evidence of Detroit Electric leadership in sales, just as the record of our cars in service is proof of Detroit Electric leadership in quality.

For years the Detroit Electric has been supreme among electrics. Each year its lead has increased. Today it is more clearly established than ever before.

This enviable position of the Detroit Electric has been attained because of certain definite business policies. From the first we realized that the more cars we built—providing the number were kept within logical limits—the better we could make each car. Large volume has made practical our investment in the most mod-

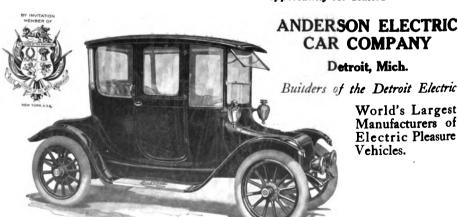
ern and accurate machinery for quantity production. For the smaller manufacturer, this would be impossible.

Besides producing a better car we are able, through our large annual output, to sell the Detroit Electric at from \$300 to \$500 less than the price asked for other electrics not even approaching the Detroit Electric in real in-built quality and new features.

Dealers—it pays to handle an electric that has the confidence of motorists as the Detroit Electric has. Fix in your mind also that scarcely any dealer's line today is complete without an electric. And in considering the electric to handle, remember this point:

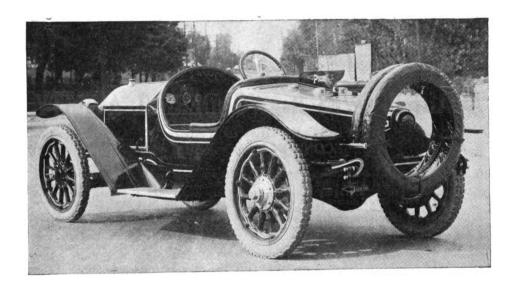
The Detroit Electric offers the widest possible range of choice. Detroit Electric worm gear axle or bevel gear axle; front seat drive, rear seat drive or Detroit Electric Duplex Drive operated from either seat; a wide range of body types.

Write and get information about our opportunity for dealers



Model 47...Worm Gear Axle, \$2850





## Real Power

The real power of any automobile is the net amount available after friction has taken its toll. Bower Roller Bearings, because of their original design, carry the heaviest loads with the slightest loss of power. It is for this reason, and also because Bower Roller Bearings never need adjustment, that they are used in so many of America's best-known cars.

Notice: The Bower Roller Bearing is patented in the United States and foreign countries. INFRINGERS of our patent right to MAKE, VEND or SELL will be duly prosecuted.

## BOWER ROLLER BEARING COMPANY

Detroit, Michigan





## AGAIN PROVES Its WONDERFUL ABILITY

FIRST IN GRAND, PRIZE SECOND IN VANDERBILT

A Mercer, driven by Edwin Pullen, won the world-famous Grand Prize race at Santa Monica, Cal., Feb. 28, averaging 77.2 miles per hour for the entire distance, 404 miles.

At 300 miles the Mercer's average was slightly over 79 miles per hour—a new road record for the distance. The former Grand Prize record was broken, and a new world's record for 400 miles was established.

The second car to finish was 40 MINUTES behind the Mercer. The fourth car, Mercedes—one of Europe's best—was ONE HOUR behind.

An average of 77.2 miles means that the Mercer was traveling over 100 miles an hour on the straightaways.

In the Vanderbilt Cup Race, Feb. 26, a Mercer driven by Barney Oldfield, was second—only ONE MINUTE behind the Mercedes. The Mercer's average in this race—294 miles—was 75 miles per hour.

Had it not been for an unfortunate puncture on the 32d lap, which cost the Mercer slightly more than a minute, the result doubtless would have been different.

These remarkable victories again stamp the Mercer as being of superior construction. They were not achieved through any chance or luck, but were absolutely the result of merit.

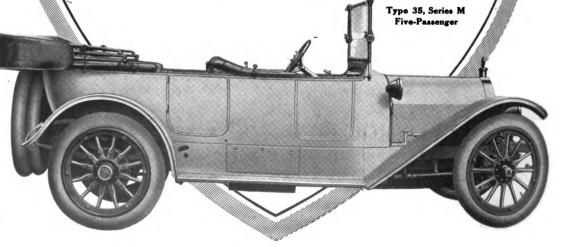
The Mercer is not a one-time winner. For four years it has participated in speed contests of every description, being a consistent winner at all times.

This latest demonstration of Mercer endurance and efficiency should have great significance for the prospective buyer of an automobile.

Embodied in all Mercer models are the lessons we have learned from racing. Every car produced is built with the same regard for accuracy that made these victories possible.

Catalogue sent on request. Some desirable territory still open for live dealers.

Mercer Automobile Co., 400 Whitehead Road TRENTON, N. J.





## Owners Blame You for Troubles that are Not Your Fault

**DUT** this transparency in your window and it will prevent owners' troubles and let you out.

The garage man is nearly always blamed if the finish of a car is injured. The fault is usually with the varnish.

## We offer you this Transparency Free

It pleases the owner to learn how to get a finish on his car that will last.

It often results in a painting job for you or the paint shop to which you refer owners.

Tear off the attached coupon and we will send it to you without charge.

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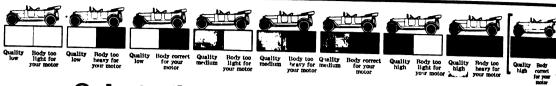
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TRADE VARNISHES MARK

## TO THE TRADE

The advertisement below appears in the following publications this Spring: Seturday Esening Post, Literary Digest, Colliers, Life, Scientific American. In addition it will appear in a list of farm papers and in a list of automobile papers.



## Only 1 oil in 9 is correct for your car

That is conservative

There are two vital factors in automo-There are two vital factors in automobile motor lubrication. One is the oil's quality. The other is the fitness of the oil's body for your type of motor.

There are many variations in the body

of oils.

of oils.

Only one is correct for your motor.

There are also many variations in quality. But, under the heat of service in your motor, only one quality will show maximum lubricating efficiency.

What if your oil is below the highest quality or incorrect in body?

Loss of power or undue friction, or both must result. Repair bills follow.

Consumption of gasoline and oil mounts up.

#### Two motor demands

You may "want" correct lubrication. But you will seldom get it by chance. It is of the utmost importance that you find the oil whose body suits your motor and whose quality offers the highest protection after the oil has been distributed

It is now generally known that oil of correct body for your car can be determined only by detailed motor analysis-backed by scientific lubricating experience.

#### How friction hides

We are sometimes asked why incorrect lubrication does not always show up quickly in a motor.

That is an interesting question.

Some years ago motor parts were more exposed. Cars were often under-

Some years ago motor pairs were more exposed. Cars were often underpowered. Noise, overheating and loss of power gave the motorist timely warnings to investigate his lubrication.

But today most motors are amply powered and are largely closed in. Loss of power may not be noticed. Sound is deadened beneath metal jackets. Parts are frequently out of sight and hearing. It is much like smothering an alarm-clock gong under a pillow.

The noises of friction are now partly smothered. But the friction still exists. There is only one safeguard against undue friction—correct lubrication.

#### The solution

As a fundamental step in producing the oils specified in the Chart below we analyzed the motors of every make of automobile. We found widely varying conditions.

Correct lubrication for every type of motor demanded several grades of oil. Keeping before us the special requirements of gasoline engine lubrication, we manufactured these grades from selected

manufactured these grades from selected crude stocks.

In our Lubricating Chart we then specified the correct grade of Gargoyle Mobiloil for each car. Every year by fresh analyses and demonstration, this Chart is brought up to date to cover the models for that year.

This Chart, printed in part below, for a number of years has been a standard guide to correct lubrication. Our complete Chart will be mailed you on request.

Make a note of the grade of Gargoyle Mobiled specified for your car. Make sure that you secure it—buying preferably in the original barrels, half-barrels and sealed five-gallon and one-gallon cans, marked with the red Gargoyle. Then there can be no doubt that your oil will be scientifically correct for your car in both body and quality. You will use the "one" oil essential to the longest life of your car and the greatest pleasure in motoring.

On request we will mail a pamphlet on the longing of Automobile Engines. It describes in detail the common engine troubles and gives their causes and remedies.

The various grades of Gargoyle Mobiloils, purified to remove free carbon, are:

Gargoyle Mobiloil "A" Gargoyle Mobiloil "B" Gargoyle Mobiloil "E" Gargoyle Mobiloil "Arctic"

They can be secured from all reliable garages, automobile supply houses, hardware stores, and others who supply lubricants.
For information, kindly address any inquiry to our nearest office.

#### VACUUM OIL CO. ROCHESTER, U.S.A.

Specialists in the manufacture of high-grade lubricants for every class of machinery. Obtainable everywhere in the world.

BRANCHES: DETROIT Ford Bldg. CHICAGO Fisher Bldg. PITTSBURGH Farmer's Bank Blds. PHILADELPHIA INDIANAPOLIS
Indiana Pythian Bldg MINNEAPOLE Plymouth Bldg.

## A guide to correct automobile lubrication

Explanation: In the schedule, the letter opposite the car indicates the grade of Gargoyle Mobiloil that should be used. For example, "A" means "Gargoyle Mobiloil A." "Arc." means "Gargoyle Mobiloil Arctic." For all electric vehicles use Gargoyle Mobiloil A." "The recommendations cover both pleasure and commercial vehicles unless otherwise noted.

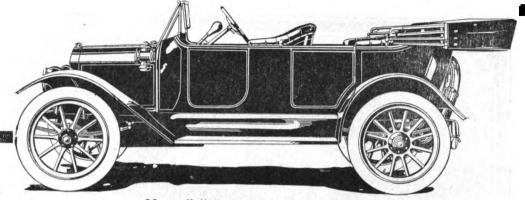
MODEL . OF	1910		1	1911		1912		1913		1914	
CARS	Summer	Winter		Winter	1	Vinter	Tage 1	Winter	i i	N. miles	
Abbott Detroit	Ä	Arc		Arc	1 5	Ā	- S	-	.05		
Alco.		Arc	Arc	Arc	Arc	A	Δ.	Mrc.	Mc	Mrc.	
American		Arc		Arc	I A	Arc	A	Arc.		1	
Autocar (2 cyl.)	A	Are		Arc		A		~		Arc.	
" (4 cyL)	l A	E	I A	Are		Arc.	^	75	٨	Arc.	
Avery	Α.	E	A	E	اتدا	•	A	ha I			
Busck (2 cyl)			Ä	I Ā	î	2	2	^	٨	A	
(4 cyl.) Cadillac (4 cyl.)	Arc	Arc.	I۸	Are.		اجم		٠			
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	В	В	В	В	B	B	B	R	â	Α	
Delauray Belleville	Arc.		A	Arc.	Arr I			Arc.		В	
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(6 cyl.)	E	E	E	E	Arc	Arc.		^ 1	В		
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Havers 6-44			!		Arc 5	ire		Arc	2.1		
Havers 6-60			Α.	Arc [		ire		Arc.	۸	Arc.	
Haynes	0.1				· · · · ·		^ 1		۸	۸.	
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International							Ä		B	٠	
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A grade for each type of motor

MODEL OF		1910		1911		1912		1913		1914	
CARS	Summer	Winter	Summer	Winter	Summer	Winter	ammer .	Vinter.		Winter	
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(4 cyl)	Ē		E	E	E	E					
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MODEL OF		910		1101	1	912	1	616		914
CARS	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	No.
Mitchell	Arc	An				Arc.		Arc.	Λ	A
Moline	. A	E	I A	Arc		Arc.		Arc.	1500	ŀ:
Moline Knight	100				1		· ·		A	P
Moon (4 cyl.)	A	E	Arc	Arc	Arc.	Arc.	Arc.	(Arc.)		ĮΑι
Moon (6 cyl.)	1	1.7	1		1				Arc.	JАz
National	A	A	TX	A		A	A	A	Α	1
Oakland	1 4	E	1.0	10.00	1 7	Ann	A	Arc	Arc.	A:
Oldsmobile	1 0	E	10	Are	A	Are	Ain	Arc.	Arc.	Az
Overland	- A	E	1.4	Arc	Arc.	Acres	Lee	Arr	Arc.	At
Packard	1.0	E	Arc	rec	Arc.	Am.	Ace	Arr	A	Az
Packard	Arc.	Arc	Arc	Arc.	Arc.	P.	A	E	A	A
Paige Detroit	. E	E	A	Arc.	Λ	E.	21	Arc	Arrel	Án
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Rambler	A	A								
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Renault	10		1 0	Arc.	Arca	Arc.	A	let.	A	ÁΒ
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S. G. V	1000		В	Arc.	Arc.	ALC:	F 17	-1	26	ü
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Valter Vhite (Gas)	A	E	Arc.	rc. A	rc. A	e Ar	e An			



Maxwell "25-4" 5-Passenger Touring Car

## Stripped of All Adjectives and Advertising Verbiage This \$750 Maxwell is—

A CAR DESIGNED FOR THOSE discriminating buyers who yet must consider the pocketbook—or who, able to pay more, don't choose to—and who want a light family touring car of ample power to go anywhere; of reliability that guarantees a pleasurable return sans road troubles of any kind.

A CAR THAT WILL PERFORM; but also a car that looks the part; a car for the man who considers his automobile an everyday necessity and who counts the cost. A car that is economical in cost of upkeep—gasoline, oil and vire consumption.

YOU HAVE OFTEN SAID that you would be willing to pay a little more for a car that looked a lot better.

THIS IS THE CAR. It has been designed from your standpoint—for thousands of others have expressed the same desire you expressed.

KNOWING THE NEED-the demand, we have designed to meet it.

AND IT'S MADE JUST AS WELL as it's designed. Every ounce of metal that goes into it has been specified by our chief metallurgist, after the most exhaustive analyses and tests to determine the kind of metal—and alloy and heat treatment that would best meet the requirements and perform the functions of that particular part.

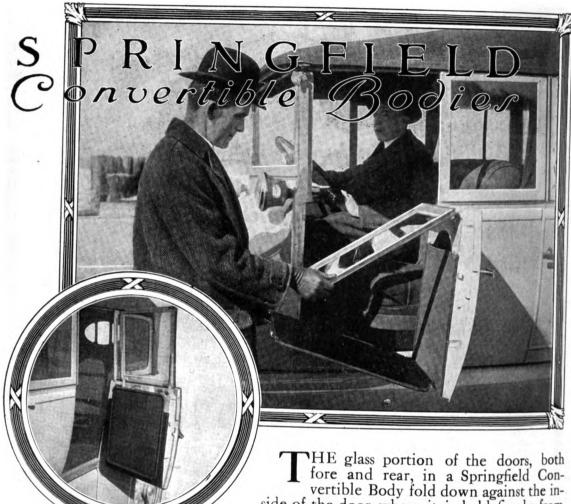
BETTER MATERIAL does not enter into the construction of any car on earth at any price; for here is the best the science of metallurgy and automobile construction knows.

THE MAXWELL MOTOR COMPANY offers this car without a mental reservation—and every dollar we have, and our reputation, stand back of it, to guarantee every owner satisfaction.

## Maxwell Motor Company, (Inc.)

Detroit, Michigan

Dealers and Service Everywhere



side of the door where it is held firmly from rattling and protected against jars or accidents by a shield, which in turn folds up over it. This shield matches the upholstery of the interior of the car

making equally as clean and pleasing a job of the inside of the door as that of any regular type body door.

When used as an open car or when used as a closed car there is nothing about a Springfield Convertible body which is not equally as neat, compact and free as the finest limousine or open car standard bodies.

When once the practical advantages of the Springfield Convertible Body is demonstrated to your customers they will have a dominating influence upon many of your sales, and in so doing will become the source of added revenue for you.

Write us for our trade discount and sales plan, and full information

## SPRINGFIELD METAL BODY COMPANY

Springfield

Massachusetts

The quality of the bearings in your car and the service they give, depends upon—the design—grade of materials used—factory facilities and workmanship.

In Hyatt Quiet Bearings correctness of design is proven by their universal adoption—they are made of the finest steels, scientifically treated—by expert workmen in the largest roller bearing factory in the world.

Two books, one about motor car bearings in general for prospective purchasers, the other for automobile owners, will be sent on request

"Hyatt Quiet Bearings"



HYATT ROLLER BEARING CO.

## MOTOR WORLD

The Dealer's Paper



The Publication Serves
the Manufacturer Best
Which Helps
the Dealer
Most.

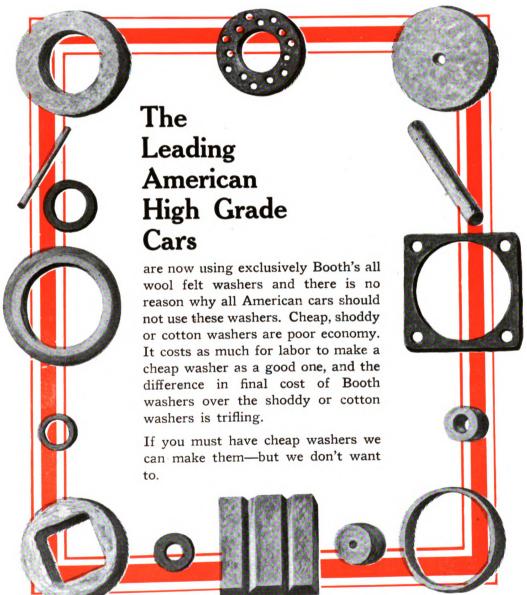
LL advertising is an effect--an influence. In the automobile business, any advertising campaign that is not designed to have a strong dealer effect and a strong influence upon the trade is poorly, even thoughtlessly planned and will fall far short of what it might have accomplished. This is so because advertising effort must go before and parallel to selling effort, and trade advertising should be your intimate personal connection with your actual or potential selling force.

## Motor World is the Dealers' Favorite Trade Paper

because it helps them, and by so doing gives double the influence to its advertising, logically.

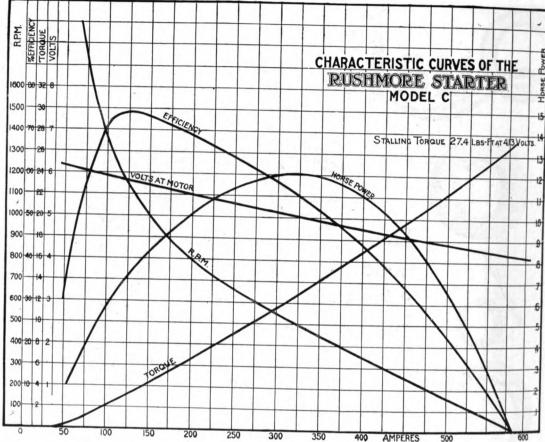
Advertising is done for effect. Dealer effect advertising should be done in the dealers' paper.





N.E.BOOTH
664 Pacific St., Brooklyn, N.Y.
Canadian Office and Factory

The Booth Felt Co., Ltd. Gananoque, Ont.,



## Is Your Starter Easily Stalled?

THE severe weather of the last few weeks has vividly demonstrated the strength or weakness driven their cars as usual. Others not so fortunate enough to have efficient starters have of congealed oil and inert gasoline. At the time when they most needed such aid, the starters

Many a starter which performs fairly well in summer stalls with a current of only 300 to 400 amperes, and exerts then only three or four times its normal torque. That weakness is not shown by curves which are carried out only a little beyond the normal running current.

## The RUSHMORE STARTER Model C

exerts, when at the point of stalling, twelve times its normal 100-ampere torque. So low is its internal resistance that it takes 580 amperes when stalled. And that heavy current is a measure both of its efficiency and of the tremendous pulling power it carries in reserve,—a pulling power exceeding 300 pounds at the flywheel rim when necessary.

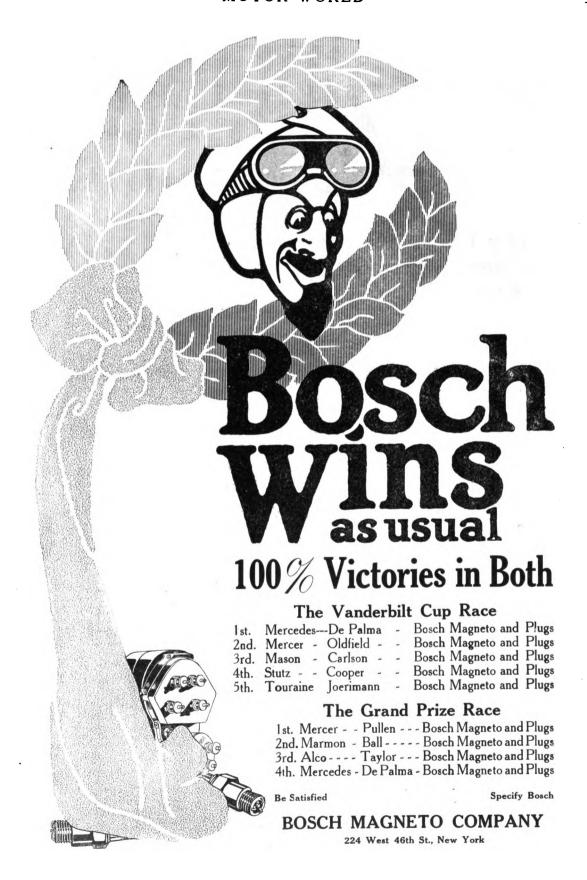
The accompanying curves give the complete Model C per-

formance with a 120 ampere battery. In torque, horsepower, resistance to stalling, and efficiency they show the Rushmore Starter to be in a class wholly by itself.

The Rushmore Starter gears direct to the flywheel. The efficiency shown is the net efficiency from battery to flywheel. Many double reduction starters now in use deliver less than 50 per cent. of the electrical energy at the flywheel under normal working conditions.

The Rushmore Model C Starter weighs only 30 pounds

RUSHMORE DYNAMO WORKS Plainfield, N.J.





## The Trade Mark of a New Standard in Motor Cloths

HE day of rubber interlined, surface coated, or artificial leather top materials is passing. These materials never have been suitable for automobile tops and have been used only as make-shifts pending the advent of a perfect automobile top cloth.

The **perfect top cloth** is now an accomplished fact.

## Laidlaw Burbank Motor Cloth

which is a one piece, single thickness cloth, absolutely waterproof and wear resisting beyond all others. It has for years been the standard open car top material in Europe and for nearly five years has been used almost exclusively by famous American body builders.

Laidlaw Burbank Motor Cloth is free from all of the mechanical and chemical weaknesses characteristic of rubber interlined or surface coated top materials.

Top materials interlined or coated with rubber or artificial leather compositions peel, crack, blister, dry out and decompose. These weaknesses always have and always will exist in this type of top coverings.

Laidlaw Burbank Motor Cloth, being free from rubber or artificial leather compositions, is absolutely unaffected by climatic conditions nor is it injured by extreme heat or cold. Tops made of Laidlaw Burbank Motor Cloth are not cracked by raising or lowering as are tops of other kinds of material. This is most important in view of the general adoption of the One Man top, which will be raised and lowered much more frequently than the old fashioned two man top.

Cadillac Motor Car Company used Laidlaw Burbank Motor Top Cloth on their entire 1914 production and have just reordered it for their entire 1915 output.

THE LAIDLAW CO., Inc., 126-132 West 46th Street New York City

Ask for Circular "A Short Discourse On Automobile Top Cloth"

# Stewart Speedometer

## Big Canadian Distributor Forsakes Centrifugal for Magnetic Speedometer

John Millen & Son, Ltd., one of Canada's largest distributors, with an extensive chain of stores throughout the Dominion, has entirely abandoned the centrifugal type speedometer and is bandling the Magnetic Type Speedometer alone.

This shows the trend of the times—a trend that has become an avalanche. It speaks in no uncertain terms of the final and complete supremacy of the Magnetic Type Speedometer.

It squares up with the fact that over 95% of the automobile manufacturers are now equipping their total output with speedometers of the magnetic type—

That more than 95% of the automobile dealers are handling only the cars equipped with speedometers of the magnetic type—

That more than one million speedometers of the

magnetic type are in use every day.

And all because the car buying public knows what is best—and insists on getting it.

Insist on having a Stewart (magnetic) Speedometer on the car you buy, and you will get it.

## Stewart-Warner Speedometer Corporation

Factories: Chicago, Ill. and Beloit, Wis.

Direct Factory Branches

Atlanta, Ga. Boston, Mass. Buffalo, N. Y.

Chicago, Ill.
Cleveland, Ohio
Detroit, Mich.
London

Indianapelis, Ind. Kansas City, Mo. Los Angeles, Cal. Minneapolis, Minn. New York, N. Y. Philadelphia, Pa.

Pittsburgh, Pa. San Francisco, Cal. St. Louis, Mo.

And Service Stations in all large cities and towns

# Speedometer in the World

## The Athlete of Travel

Highest efficiency is the perfect combination of power and lightness. Power must be in the most compact and economical form; the Gnome aeroplane motor, the sail speed of the yacht, the high power motors in the power boat, or the wiry arms and bodies of the oarsmen. And the craft driven by this power must combine lightness and the strength to stand up under every strain.

The absurd idea that weight and bulk meant power is disproved every day. No one any longer believes it.

We saw this long before other automobile manufacturers were able or willing to make the necessary outlay to investigate and prove, and disregard the precedent of years. Paris sets the pace in automobile manufacture and from Paris direct we took the latest ideas, ideas which mark an epoch in motor car development.

Unlimited capital and long years of experience enabled us to give to the public the new Jeffery. Equipped with a light high speed bioc-type motor, the car combines the qualities of lightness, power, economy, beauty and comfort in the highest degree. And the price is moderate—\$1550.

The new Jeffery is the

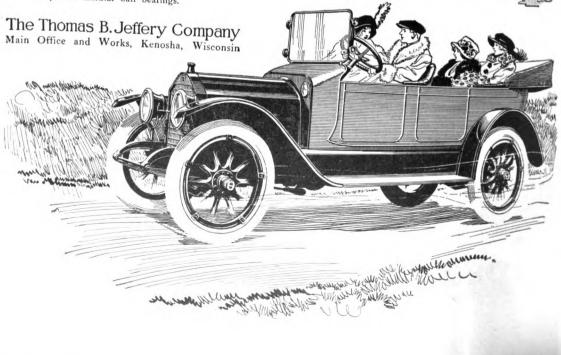
## Athlete of Motor Cars

Vanadium steel springs, axles and driving shaft.

Daimler flexible leather couplings, largely eliminating transmission friction.

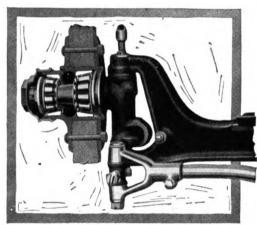
U-S-L starting and lighting system. Imported annular ball bearings.





# TIMER

## TAPERED ROLLER BEARINGS



## In the Front Wheels

OTOR car engineers will tell you that the front wheels are the points of severest service for bearings. Of all places in the motor car where bearings are used you are most apt to find Timkens in the front wheels.

These two facts are connected in the relation

of cause and effect.

Why are the centers of the front wheels the places where bearings get the hardest usage. Because, in addition to the weight they have to sustain and the shocks and vibrations, the front wheel bearings have to stand that severe outward end-pressure that comes when the front wheels change the direction of travel.

In turning a corner momentum tends to keep the car and its load on its original course. People riding in the car feel this force pushing them

outward along the seat.

Straight roller and annular ball bearings have little ability to meet this end-thrust. So, if they

are used to sustain the car's weight, additional thrust bearings become necessary.

But the Timken Tapered Roller Bearing sustains both direct load and side pressure because its rollers are tapered and revolve between a tapered, two ribbed, cone and a tapered cup, as shown in the diagram.

Another reason Timken Bearings are so widely used in front wheels is that their tapered construction makes them adjustable for the slight wear that is bound to come with time in any bearings. And, in the front wheels it is most important to be able to prevent looseness and wabbling of the wheels by adjusting the bearings.

Other facts about bearings in general and about Timken Bearings in particular are told simply and non-technically in the Timken Primer No. T-1. It will be sent free, postpaid on request to Timken, Canton, Ohio.

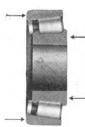
Timken Tapered Roller Bearing

vs.

Straight Roller Bearing

or

Annular Ball Bearing



Arrows indicate end-thrust and the diagrams show why its tapered construction enables the Timken to meet this force, while the straight-roller bearing cannot.



Vertical load capacity sufficient if the bearing is made big enough, but must be larger than

must be larger than a roller bearing of the same capacity.

End-thrust capacity practically none, hence additional thrust bearings are necessary.

Not adjustable; must be replaced when wear occurs.



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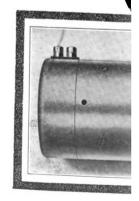
# SIN

The ease with which this system is controlled is one of its most commendable features.

## GRAY

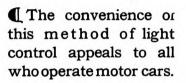
The average motorist is vitally interested in electrical simplicity. Any one can handle the Gray & Davis system with the facility of an electrical expert because it was designed and developed for the average motorist. That is one of the reasons why it is preferred by the motoring public.

One of the many types of G. & D. motors.



# ICITY

This simple switch on the dash gives instant control of the five lamps.



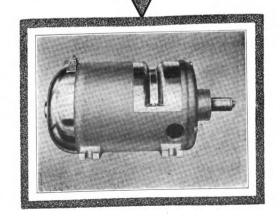
# STARTING

We have record of 30,000 miles of dynamo service without even a suggestion of trouble. The correctness of design of the Gray & Davis Dynamo has been proven during six years of actual use in the hands of the car owner. This dynamo passed the experimental stage long before other dynamos were thought of.

## **SYSTEM**

¶ The complete Gray ֎ Davis system was designed by one of the world's most expert dynamo and motor designers --- a man who has developed over 60% of the electric vehicles in use today. The experience and knowledge thus gained go into every G. & D. starting-lighting system. The result---the most highly perfected system in existence.

## DAVIS, Inc. Mass.



One of the many types of G. & D. dynamos.

# Look This List Over

AND FIGURE WHETHER YOU CAN AF-FORD NOT TO EXHIBIT AT THE ONLY NATIONAL TRUCK SHOW IN 1914

# BOSTON MOTOR TRUCK SHOW

**MECHANICS BUILDING** 

AUSPICES BOSTON COMMERCIAL MOTOR VEHICLE ASSOCIATION, INC.

## MARCH 17 to 21

Abrams Co., Myer Alma Motor Truck Co. American Tire Co. Atterbury Motor Car Co. Autocar Company

Baker Motor Sales Co. Boyd, F. Shirley Buick Motor Co.

Chase Motor Truck Co. Chicago Pneumatic Tool Co. Eldridge, W. E.

Federal Motor Truck Co. Fischer Co., C. J. Forbes, Walter J.

Fryer Co., Chas. H. Fuller, Alvan T.

Garford Co., The General Motors Truck Co.

International Harvester Co. of Mattapan Motor Car Co.

Jeffery Co., Thomas B.

Keating & Decker Kinney Mfg. Co. Knox Automobile Co. Kelly-Springfield Motor Truck Co.

Linscott Motor Co. Little Giant Truck Co. Locomobile Co. of America

Maguire Co., J. W. Maddocks, H. Ross Milliken, E. H. Myers Bros.

Packard Motor Car Co. Parcel Post Equipment Co. Palmer-Moore Co. Pierce-Arrow Motor Car Co.

R. & L. Company Reo Motor Car Co. Lauth-Juergens Motor Car Co. Rockwell Inc., C. P.

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## FEW DESIRABLE SPACES OPEN

FOR PARTICULARS WRITE TO

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#### Ever Feel A

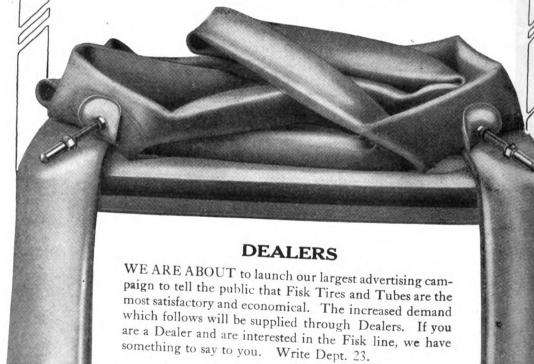
# FISK

#### Pure Fine Para Tube?

WHENEVER Fisk Pure Fine Para Tubes are on display, nine out of ten people want to get hold of and feel them. Their purity, durability and elasticity are in evidence at first glance and invite closer inspection.

THE CONFIDENCE created by this first impression is lasting and the Dealer finds a permanent bond of appreciation between himself and the customer.

FISK TUBES are the most economical because they do not deteriorate with age, withstand heat, and will bear 100% more puncture repairs than others.



#### THE FISK RUBBER COMPANY

Factory and Home Office

Chicopee Falls, Mass.

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# WINS AGAIN!

"Edwin Pullen, in a Mercer, wins the Fifth International Grand Prix Race at Santa Monica, traveling seventy-seven and two-tenths miles per hour for four hundred and three miles." Brief as it is, that sensational bulletin adds one more victory to the long list of Rayfield conquests. Two successive victories in this strenuous race—Caleb Bragg in 1912 at Milwaukee and Edwin Pullen at Santa Monica. Pullen used a Rayfield because he wanted Rayfield results. He expected to break all records for the Grand Prix. He raised the Grand Prix speed three miles per hour and outdistanced his nearest competitor by 40 miles at the finish. For 35 laps Pullen broke the world's record for speed, traveling 79.27 miles per hour. Need we emphasize the remarkable showing of Rayfield carburetors. Need we tell you who already know the merits of the Rayfield. It is sufficient to say, look to the records of achievement in the past. Base your judgment on the proofs of men who use Rayfield carburetors because they want the advantages of Rayfield superiority.

#### Vanderbilt and Grand Prix

**Read This List of Rayfield Victories** 

Edwin Pullen	_	_	-	_	Mercer -	-	-	-	1914 Grand Prix at Santa Monica
Caleb Bragg -	_	-	_	_	Fiat	-	-	-	1912 Grand Prix at Milwaukee
Ralph De Palma		-	-	-	Mercedes	-	-	-	1912 Vanderbilt at Milwaukee
Ralph Mulford	-	-	-	-	Lozier -	-	-	-	1911 Vanderbilt at Savannah

The Rayfield is the only American Carburetor that ever won the Grand Prix.

### Findeisen & Kropf Mfg. Company

2102 Rockwell Street, Chicago, Ill.

Branches---1140 Michigan Ave., Chicago

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THE Hotel Copley Plaza offers every physical advantage to show-patrons. Adjacent to the Back Bay and Huntington Avenue Stations, and a convenient distance from the Mechanics Building.





The Rotunda



The Grill

#### Buy the Car When You **Know the Springs** -Not Before

TOU can judge the beauty of the car you buy at the first glance You can tell something of its power when the demonstrator takes you over a hill. But you can't be sure of the springs unless you determine what springs they are and what their record is. Because a spring giving supreme comfort in a demonstration may, within three months, sag and settle until it bounces and jolts you at every slight depression in the road.

Avoid spring uncertainty and disappointment. Specify Detroit Springs and be sure. We protect you beyond that first demonstration, which can't tell you what the spring is worth. Every Detroit Spring is backed by a guarantee against settling or breakage for two years from date of manufacture. It is spring insurance for you.

Identify Detroit Springs by This Trade Mark

=SELF-LUBRICATING

#### And by the Lubricating Cup Near the End of Each Leaf

When you're looking the car over, watch for that Detroit Spring trade mark.

It means safety. Detroit Springs are almost impossible to fracture.

Comfort is certain.

Your tires will wear longer because Detroit Springs automatically assume a large percentage of this work

That pest of the motorist-squeaking-is unknown.

These things require an inspection of the springs. And if you don't find the trade mark or the lubricating cups on the leaves, demand that your car be equipped with Detroit Springs.

You can get them. True, they cost the manufacturer a little more. But he'll give them to you, if you insist. Detroit Springs on any car are a strong indication of quality construction throughout the car.

#### How to Ride Comfortably and Safely Write for Booklet

It pays to know springs, to know why you should insist on Detroit Springs. The information can be yours for the asking. A booklet of remarkable interest will be mailed to you on request. It tells the story of spring making from your standpoint as a car owner. Explains how Detroit Springs instandpoint as a car owner. sure your safety and lengthen the life of your car and tires. Write for it.

**Detroit Steel Products Company** 2258 East Grand Boulevard, Detroit, Michigan

#### Why **Detroit Springs** Don't Squeak

The silence of Detroit Springs is enough in itself to decide you in their favor. The Self-Lubricating Device -patents pending-is sim-ple, but mightily effective. Near the end of each leaf is a small distributing reservoir that automatically feeds the lubricant as it is needed. Not only is there no squeaking, but the spring is assured of far longer life. That's one of the reasons—

#### Whv **Detroit Springs** Are Guaranteed for Two Years

Other reasons are material reasons, constructional reasons, workmanship reasons, test reasons.

We decided to make the guarantee of two years' length, because we wanted to be conservative. Detroit Springs will give excellent service indefinitely. Our confidence is shown by the fact that we have doubled and in many cases trebled the best car guarantee. And our confidence is based on the most enduring of foundations.



#### Pyrometer

Pyrometer
This man regulates the delicate
Triple Heat Treatment of Detroit
Springs. Forty-eight fires are
maintained at just the right temperature by means of the ThermoElectric Pyrometer. The dial seen
above indicates the heat of any
furnace by a color system. The
actual temperatures are known
only to three members of our
organization and are among the
most carefully guarded secrets
of our process.

Specify **Detroit Springs** on Your Next

No. 345 BARRETT JUNIOR 1500 lbs. capacity BARRET



AUTOMOBILE

The Barrett Adjustable Footlift-Patents Pending-the greatest jack improvement in years, and an exclusive feature of the Barrett 1914 Models. Is both adjustable and interchangeable. Can be fitted to Barrett Nos. 06, 07 or 08, converting them instantly into Nos. 066, 077, or 088. The Footlift is adjustable at any distance from top lift, to suit different front and rear axle heights.

BARRET

No. 08 STANDARD 1 Ton Capacity

Patent Pending

No. 345 - Barrett Junior Patents Pending—Smallest Barrett with malleable iron base; for cars under 3,000 pounds. A moderate priced jack with every Barrett advantage.

No. 08-Barrett Standard

-One-ton capacity; height, closed, 111/4 in.; raise, 61/2 in. Base, socket lever and top of malleable iron; rack, pawls and pins special analysis high carbon steel, heat treated. No screws

-parts cannot jar loose. Nos. 06 and 07 with 51/2 in. and 4 in. raises respectively.

> Barrett 1914 Jack Specifications represent more strongly than ever the highest develop-ments of jack safety, efficiency and convenience. Pawl points are machined all around, meshing perfectly. Pawl bearings also machined. Tire tool lever furnished with all new styles. Bearings, gears and racks of superior strength, high carbon steel. And every Barrett Jack is rigidly tested before leaving the factory.

The Duff Manufacturing Co. Established 1883

PITTSBURGH, PA.

50 Church Street New York

Candler Bldg. Atlanta, Ga. eet Peoples Gas Bldg. Chicago, Ill. Monadnock Bldg., San Francisco

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You will want to be posted-all your customers and be

VEEDOL is a proven oil made from Pennsylvania petroleum.

Full details later.
For 30 years we have been specializing on Pennsylvania petroleum to secure uniformity in our oil.

In VEEDOL we have found the combination of a gasoline motor oil that gives most lubrication and least

# We will co-operate with you and help you through our consumer Dealers and Hall the High of the Hall Clurers

Write today if there is no VECOL agent in your territory. We want responsible representatives and we. ... by keeping abreast of the rapid device of the rapid dimit entropy of the rapid dimit.

VEEDOL will give you a big profit; will be a business builder, and will mean satisfaction to your customers.

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BICYCLING WORLD AND MOTORCYCLE REVIEW, 1600 Broadway, New York

# Announcement

I beg to announce that I am organizing a Company to manufacture the new

# SINGER CAR

Full details later.

Chas. A. Singer

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by keeping abreast of the rapid development of the "two-wheeler."

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COOPER writes. "Dixon's Graphite Automobile Lubricants are about as necessary to a racing car as gasoline. I like that kind of lubrication for my little Stutz."



TETZLAFF writes that he "would rather pay \$5.00 per pound for Dixon's Graphite Automobile Lubricants than use any other as a gift."



OLDFIELD after his first use of Dixon's Graphite Automobile Lubricants, wrote: "I have never before experienced the sense of safety and lubrication surety that I felt to-day."



VERBECK writes: "Having thoroughly tested several lubricants, 1 am as thoroughly convinced that Dixon's Graphite Auto-mobile Lubricants are superior to any other on the market."



NIKRENT a Santa Monica winner, writes: "It is my intention to use Dixon's Graphite Automobile Lubricants in all my future races."



writes: "I cannot speak too highly of Dixon's Graphite Automobile Lubricants. They not only reduce friction to a minimum, but their lasting qualities are remark-



writes: "I am thoroughly convinced of the merits of Dixon's Graphite Automobile Lubricants and will both use and recommend them in the future."

### **In Every Race**

of importance that took place in the United States last year, every car that finished in first, second or third place (with one exception) was lubricated with

#### **DIXON'S GRAPHITE** Automobile Lubricants

Considering the speeds made, and the conditions encountered, this record offers the best reason why every car owner and every dealer should standardize on **Dixon's Graphite Auto**mobile Lubricants.

Send for "Lubricating the Motor" Booklet No. 23

Made in JERSEY CITY, N. J. by the

Joseph Dixon Crucible Co.

Established 1827



HARVEY HERRICK "I am conwrites: vinced that the high average of speed maintained and freedom from all kinds of lubricating troubles was due to the use of Dixon's Graphite Automobile Lubricants.



writes: "All of our notable winnings last year were made while using Dixon's Graphite Automobile Lubricants, which for several seasons have been used by Stutz racing teams.



BERT DINGLEY writes: "I thank you for the results and fine lubrication obtained from Dixon's Graphite Automobile Lubricants in cars I have operated for speed and road contests."



JACK LE CAIN "Friction reduced, wear prevented and speed of my car increased by Dixon's Graphite Automobile Lubricants. I cannot recommend them too highly."



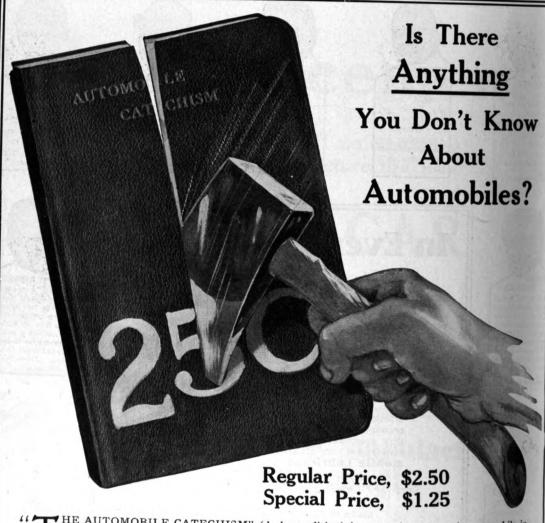
CHAS. C. MERZ writes: tried out many lubricants, but since Graphite Dixon's Automobile Lubricants were first brought to my attention I havenever found anything to equal them."



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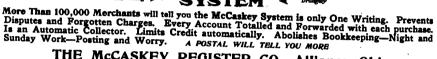
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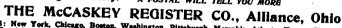
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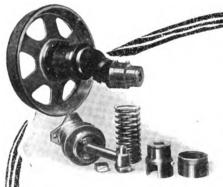












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If everybody realized that the CLUTCH is the point of contact with the driver—the place in the car where he feels things—KONIGSLOW simply couldn't supply the demand.

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Don't wait until you are ready to place orders—write us today. Remember KONIG-SLOW'S CLUTCHES talk for you more than they do for KONIGSLOW.

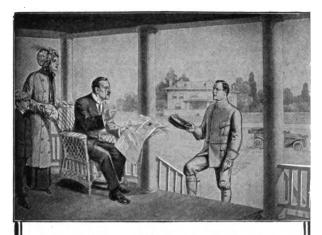
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For Clutches Rocker Shafts Control Levers Universal **Joints** 

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"I know you are a careful driver, but it is best to adopt every device to prevent accidents.

"I can't afford to take any chances. We have all foolishly depended on rubber alone long enough. It's time to awake to our responsibility. So go at once and buy a complete equipment of Weed Chains and never start out without them when the roads or pavements are slippery or greasy."

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Insure Against Anxious Moments



Probably no other device has done so much to raise the factor of automobile safety as WEED CHAINS. They are the proverbial "ounce of prevention" against skidding, the cause of over ninety per cent of all automobile accidents—Life Insurance and Accident Insurance Companies strongly endorse them and recommend their use. Taxical Companies, for their

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for WEED CHAINS makes them the **most profitable** Automobile Accessory handled by Dealers—Quick and Steady Sales—No Dull Seasons—No Dead Stock—Easily Handled—Liberal Profits—Universal Satisfaction.

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The persistent, constant and strenuous stresses of race track speed prove the superiority of New Departure Ball Bearings.

Thirty-nine winnings, twenty-six seconds and eleven thirds, over a total of twenty-eight other motor cars, including foreign racing models, is the story of the New Departure equipped Mason Car the past season.

The American-made New Departure is guaranteed. Literature on request. Special Cyclecar data will be sent

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#### Look to your Tires

YOU can take a thousand mile's of service out of a set of tires by driving them insufficiently inflated over ten miles of road.

#### The New Positive Lock Stop Twitchell Air Gauge

Insures you against premature wearing out of tires.

It is TIRE INSURANCE FOR ONE DOLLAR

For Sale by Jobbers, Dealers, Garages or

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Volunteers have won the great victories for the American Nation. In time of crisis, volunteers have marched to the front, their hearts imbued with the fire of particism, their ears dest to personal interests, their whole being devoted to the cause of sacrifice for the public good.

The Lincoln Highway is being built by Volunteers.

It is being built by American patriots—at once a mighty tribute to the Great Man, and an object lesson to Congress, to the people of this country and of the whole world—a lesson in the advantages of good roads. It is going to start a

whole world—a reson in the aurantages of good roads. It is going to that a movement that will free the American people from the bonds of rural isolation. Send \$5 today and thus become one of the builders of this great Highway which makes travel free and easy across the land of the free. Send \$5 today—currency, check, draft or money order, to A. R. Pardington, 2115 Dime Bank Building. Details and the Highway benefits are emblared to your owners. Building, Detroit, and get the Highway insignia, an emblem for your office an i your family vehicle, a badge of Immortality to which you can point with pride. This \$5 will enlist you in a great pioneering cause.

Send \$5. The amount is small, the rewards great in the knowledge that you

have put your shoulder to the wheel in a time of national need.

The pennants shown are 36 inches long, printed in four colors, and sell for \$1.00 per pair (rights and lefts).

#### The Lincoln Highway Association Detroit, Michigan

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All you do is apply raw gum rubber, clap on the steam vulcanizer, put water in one section, gasoline in the other, and touch a match. In 20 minutes' time the joh is done. Done so well, mind you, that the union of raw rubber and casing is as solid as the casing itself. Done without risk of ruining your tire by burning it (one of the dangers of the common fire heated vulcanizers—AND—done at a SAVING that in I season pays 10 times over for the Steam Vulcanizer. Kerosene and alcohol can be used in place of gasoline for fuel.

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That's what you can do. You can mend holes either in tube or casDEALERS! Here's a live proposition! Get in touch with as at
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#### To the Man Who Takes Care of His Own Car

Anything which will eliminate that feeling of uncertainty as to the satisfactory operation of his

motor-car engine is sure to demand attention and interest.

Tell him that a large percentage of engine trouble is due to the presence of water and dirt in the carburetor. That by using a No-Shammy Funnel, which is guaranteed to remove all the water and dirt from the gasoline, he can feel assured of gasoline ready for explosion at the first cranking.

Your possible customer is every owner of a motor-car, who is not at present using a No-Shammy Funnel. Let all who enter your store be told about it.

The No-Shammy Products Co. O. C. FOSTER, Sales Direc Cleveland, Ohio





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Everybody wants new business, but it does not follow that it will come to you unless you have the facilities to go after it.

A SANFORD TRUCK will give you a larger, more dependable and efficient delivery route radius. This means you can reach new customers at greater distance without increasing your costs.

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The Car of Comfort You will enjoy the silent, luxurious comfort of the KisselKar. Extra liberal wheelbase, big wheels and tires, shock absorbers and 11 inches of seat upholstery absorb road vibration—the deep pitched seats and roomy tonneau enable you to relax KISSEL MOTOR CAR CO. roomy tonne able you to restfully. Ask for illustrate 159 Kissel Avenue rillustrated



Three Perfect Models

60 "Six" \$3150

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# Automobile Tires

experience isn't everything in tire-making. No, experience isn't everything in tire-manus. Neither is real rubber and neither is handworkmanship. But the three, taken together, in Kelly-Springfield Tires and Tubes, cover just about every requirement that has yet occurred to the severest critics.

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Five hundred dollars is the price of the Ford runabout; the touring car is five fifty; the town car seven fifty—
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have been used for years in several well known makes and exclusively in two of the most popular cars on the market.

Built in standard types and to specifications. Deliveries as you want them.

Let us quote you prices on your 1914 contracts.

METAL PRODUCTS COMPANY DETROIT, MICH.





#### Shock Absorber

Only spring shock absorber made that is adjustable to any load. Slight turn of your wrist tightens or releases tension of shock absorbers to changes in weight of load. Easy to operate. Adjustments made in a minute's time. Remains in same position until changed.

The Coxajusto is a real shock absorber. Secures genuine comfort in riding and a saving of wear and tear on your car and tires. It will pay you to send for full information.

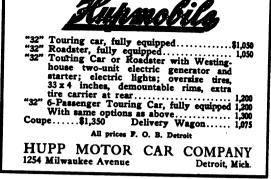


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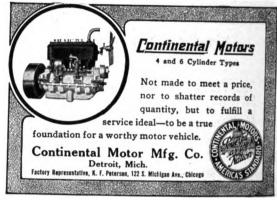


















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334 x 514 four and six cylinder, 416 x 514 four cylinder, 416 x 514 four cylinder, 5tandard or Unit, and 4 x 4 four cylinder Standard Type. All L Head, 4 Cycle.

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#### FEDDERS RADIATORS

we would like to send our latest catalogue.

Fedders Manufacturing Works 57-67 Tonawanda St., BUFFALO, N. Y.

Why should the auto business be different from any other business? To my mind it is not, and the sooner it gets down to a horsesense basis the healthier it will be. The day when it was a "game" is gone. The red fire and hurrah period is past. And the companies which stay in are the ones which are going to adopt a hard-headed, closemargined, business-like policy.

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President of THE LEXINGTON-HOWARD CO.

Manufacturers of Lexington "Four," \$1335, and the
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# Radiator FANS Largest Range of Sizes. Daily Capacity 1000 Complete. THE SPARKS-WITHINGTON CO. Jackson, Mich. WALKERVILLE, CANADA.



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to a

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Rudge Whitworth Detachable Wire Wheels

fitted with

Houk (Detachable) Rims

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**Automobile Axles** 

LEWIS SPRING & AXLE CO., Jackson, Mich.

#### SEND \$10.00

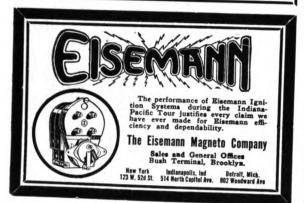
#### for the Empire Gasoline Economizer We'll Send It Back

if at any time it does not give you entire satisfaction. The Empire Gasoline Economizer is an instrument attached to your intake manifold. It is the "watchdog" of the carburetor; the sentinel of the gasoline supply. It will save from 20% to 80% of your gasoline bill; keeps carbon out of the cylinder, and prevents overheading of the motor. heating of the motor.

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This name on Automobile Tires and Rubber Accessories signifies inherent qualities of material and workmanship that insure the maximum of service at the minimum of expense.

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Our new and improved manufacturing facilities insure quality products and prompt deliveries in large or small quantities.

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Mechanical, durable, simple and efficient. 100 per cent. uninterrupted service from the time it is attached.

Write for particulars regarding dealer arrangements.

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# -a Genuine Vulcanizer

Saves Tires - Saves Repair Bills - Can be Carried in Tool Box

At last—after months of experiments and tests we have finally perfected a Shaler Vulcanizer for repairing tubes and castings, that can be carried in the tool box and can be operated anywhere at any time. We now announce the "Shaler Safety Vul.-Kit." at \$3.55—the lowest priced—easily efficient Vulcanizer made today.

No Burning Flame—No Danger of Fire If Accidentally Upset

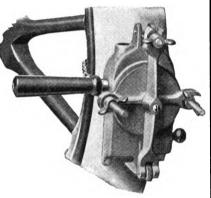
No watching, no regulating; simply fill the cut or puncture with new rubber, clamp on the Vulcanizer-fill light the generator. The fuel supply is limited to that required for perfect vulcanization. No more—no less, ten't overcure or undercure. Vulcanizing surface by a swivelled plate inlaid with asbestos to retain the heat prevent pinching the tube. You can't accidentally spoil a repair or tube by clamping one side of the plate later than the other. Handle, slaway cool, be punits removing Vulcanizer from tire as soon as repair is finished. Such as the property of the punits removing Vulcanizer from tire as soon as repair is finished.

#### FREE—Book on "Care and Repair of Tires"

Contains valuable tire information that every motorist should know and it explains all about tire troubles and ir causes—how to care for Ures—and hints on how to get more mileage. The leading American and Foreign amobile Journals quote this book as an authority. We will send a copy free on request—together with full inculars about the Shaler Safety Vul-Kit at \$3.50.

The C. A. Shaler Company, 409 Fourth St., Waupun, Wis.

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#### "WHITNEY" SILENT CHAINS

For Driving Cam Shafts, Magnetos, Lighting Systems, Generators, Pumps, Self-Starters, Etc.

If you are contemplating the use of silent chains don't fail to try the "WHITNEY." We have made chains for years and have the most complete and modern factory of its kind in the country.

We have completed a large addition to our factory and are now prepared to make prompt delivery.

Send for catalog E. It contains useful data and information for engineers and designers.

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#### For Sale – Wants Exchang

SALES MANAGERS—Young man desires connection with factory sales organization where advancement is offered. Has mechanical and selling training. Thorough knowledge of automobile industry. Address Box 275, care Motor

\$100 up. Hudson, Buick, Ford, otherines, parts. UNITED MOTOR SALES CO., Dept. 304a, Detroit.

WANTED—Partner for three year established garage business. Located on Boston Post Road. Have agency for Ford and Reo cars. Territory fifty thousand population. Address, 226 Cook Ave., Meriden, Conn.

PEERLESS AUTO BODY POLISH. A brightener and restorer of life to all old varnished surfaces. Especially adapted for automobile bodies where the life of the varnish is worn out. THE CO-LUMBUS VARNISH CO., Columbus,

STARTING MOTORS. We have twelve electric Starters complete with motor, clutch, gears, base and switch. Standard make and can be installed on most cars. The price is right. Address. Box 274, Motor World.

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FORD Racing Type Bodies, we build them in several models. Also Hoods, Seats. Tanks and Fenders. AUTO SHEET METAL WORKS, 1530 S. Michigan Ave., Chicago, Ill.

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A market place where Dealers, Jobbers and Manufacturers may buy, sell or trade used cars, parts and appliances and where help or situations may be secured at a nominal cost.

FOR SALE—One 5-passenger, 22-H.P. Buick auto, reasonable. A. W. Buick auto, reasonable. LAKE, Smith's Ferry, Mass.

GET List of Automobile Registrations direct from State House. Quickest and best daily service. \$45.00 for entire year, or at rate of \$4.00 per month. Special lists of all kinds promptly compiled. PETER DONNELLY, Box 180, Albany,

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PEERLESS EXTRA FINE BLACK
BAKING JAPAN.
For brass, nickel or iron. Bakes to a
high gloss finish that will not crack, chip
or peel. Solid covering one coat, without
a primer or undercoat. THE COLUMBUS VARNISH CO., Columbus, Ohio.

MAILING LISTS AND STATISTICS. Owners or dealers; any state, county-or city; weekly and monthly supplements at lowest prices. Special lists of Electrics. Trucks, Fords, Studebakers, Over-

lands, etc.
MOTOR LIST CO. OF AMERICA.
240 News Arcade. Des Moines, Iowa.

TO LET-The repair department in a TO LET—The repair department in a first-class garage, machinery included, having the agency for Ford, Overland and Cutting cars. An up-to-date garage, a large repair business and great opportunity for the right man. BATH GARAGE COMPANY, Bath, Maine.

A RE YOU in need of any additional help in any department of your business? Are you out of employment or looking for a better connection? Have

you second-hand apparatus of any kind or do you want to buy second-hand material? Have you a factory site for sale or do you want to buy one? If so, use the Want and For Sale column of the Motor World. Six words to the line, fifteen cents a line. Advertisements can be inserted over a number when it is desired and identity of the advertiser will be kept confidential.

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A heavy bodied, high gloss finish enamel. Covers solid with one coat. Air dries in thirty-six hours. THE COLUMBUS VARNISH CO., Columbus, Ohio.

WELDING Plant, Cutting Plant, Car-bon Removing Outfit, or a combi-nation of all of these at from \$15.00 to \$175.00 for high or low pressure system. For full particulars address BERMO WELDING APPARATUS CO., Omaha,

BROKEN CRANKSHAFTS, cylinders, Crankcases, flywheels, gear teeth, pistons, perfectly welded and machined ready to replace. Guaranteed and references. Machinery up to 5 tons welded ATLAS WELDING WORKS, 74-76-78 Irving St., Rahway, N. J.

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PEERLESS CYLINDER ENAMEL A black gloss finish not affected by grease, heat or gasoline. Keeps the engine clean and the metal parts from rusting. THE COLUMBUS VARNISH ing. THE COLUM. CO., Columbus, Ohio.

A UTOMOBILE Cylinders reground. new pistons and rings fitted. Garage air compressors. CAST IRON BRAZ-ING CO., Manchester, N. H.

These columns offer you an opportunity to appeal to an audience of 8,000 readers whose merchandising taste is being cultivated weekly to the highest degree by our articles on "Wide Awake Merchandising."

#### ORBIN-BROWN SPEEDOMETER

"The Speedometer of Absolute Accuracy" Write for Catalog

The Corbin Screw Corporation
THE AMERICAN HARDWARE CORPORATION, Successors

New Britain, Conn., U. S. A. Chicago

PENNSYLVANIA. Oilproof VACUUM CUP TIRES SKID Making Their Mark Everywhere Pennsylvania Rubber Company Jeannette, Penn.



#### **Every Stutz Car**

is exceedingly easy-riding and comfortable. The straight line low alung body, deep upholstery and luxurious appointments of the Sturdy STUTZ give it that aristocratic design which lends dignity and quality to a high class motor car. Write today for advance booklet A-15 Sturdy STUTZ Announcement.

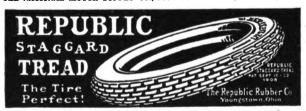
STUTZ MOTOR CAR COMPANY, Indianapolis, Ind.

#### **National Telescope Pump**

Screwed in spark plug hole, ONLY 5 INCHES HIGH. Metal piston rings, handle, noiseless. Guaranteed equal to any \$15 pump on the market. Dealers write for full information and discounts. Without gauge, \$8.50, with gauge, \$9.50

Manufactured by

THE NATIONAL MOTOR SUPPLY CO., 5608 Euclid Avenue, Cleveland, Ohio





Magneto Plugs coax the maximum power out of the engine

#### **Prest-O-Lite**

**Lighting System** 

All the facts on all lighting systems mailed you on request.

The Prest-O-Lite Co., Inc., 287 Speedway (Contributor to the Lincoln Highway)

#### AMERICAN KUSHION KORE

A tire filler 10 to 20 per cent. lighter than any other tire filler. A big proposition for dealers who are on the alert for more and better business. Write for details.

AMERICAN KUSHION KORE TIRE CO. Buffalo, New York

For anything in sheet metal that goes onto an automobile ask the

#### HAYES MANUFACTURING COMPANY

**DETROIT. MICHIGAN** 

Largest Users of Sheet Metal in the World

#### Schafer Ball Bearings

Famous For Their Durability

BARTHEL & DALY, 42 Broadway, New York

Western Representative, Chas. E. Wade Sales Co., 650 Woodward Ave., Detroit, Michigan.

TO-DAY

#### **United States "Nobby" Tread Tires**

Stand Alone — In a Class by Themselves

United States Tire Company, New York



specialists Spring Suspension High Grade in Only

CLEVELAND, OHIO



#### TOP MAKERS don't overlook the "Sharrer One Hand Top" agency

Be prepared for the Spring rush, write quick.

SHARRER PATENT TOP CO. Inc. 247 West 55th Street

#### METZ "22" ROADSTER \$475

The "gearless car"—no clutch to slip, no gears to strip—completely equipped, fully guaranteed. 4-cylinder, 22½ H.P. water-cooled motor. Bosch magneto, artillery wheels, best quality clincher tires. Makes 5 to 50 miles per hour, 28 to 32 miles on 1 gallon of gasoline. Great hill climber. You can secure EXCLUSIVE SALE in your territory. Write for Book "B."

METZ COMPANY, Waltham, Mass., U. S. A.

#### HESS AUTOMOBILE AXLES

Your Car as Good as Its Axles Hess Axles Make a Good Car **Enough Said** 

HESS SPRING & AXLE COMPANY, Cincinnati, Ohio







DETROIT. MICHLUS.A.

CFT/EVWL

February Tenth 1 9 1 4

Hess-Bright Mfg.Co., Philadelphia, Pa.

Gentlemen:-

We are pleased to enclose herewith our signed contract dated Feb. 1st covering our requirements in Annular Ball Bearings for a period of one year from date of contract. This is the first time this company has contracted for its Bearing requirements from any one concern and we wish to impress upon you the necessity of arranging your plans and stock to satisfy our requirements.

Respectfully,

Packard Kotor Car Company.

Purchasing Manager.





HEN you buy a Klaxon you buy the best warning signal made. You buy the signal that has been selected as equipment by the makers of every high-priced car; that is in use today by more than 275,000 motorists; that is known the world over as the STANDARD.

You buy a signal that you can DEPEND ON—invariably to clear the road in the country; to get instant attention and action in the noisy traffic of the city; that is equal to any emergency ANY where.

#### You Buy More-You Buy the Klaxon NAME

WHEN we put the Klaxon name on a warning signal, we enter into a contract with the ultimate owner of that signal. We contract to give him complete satisfaction—INDEF INITELY. There is no time limit in the Klaxon guarantee.

We want him not only satisfied—but ENTHUSIASTIC: and to this end stand ready and willing to go to any expense or trouble.

If he ever has difficulty with his Klaxon; if it ever fails to operate as it should operate; if for ANY reason, he is displeased; we stand ready—and GLAD—to overcome the difficulty;

to do it promptly and completely.

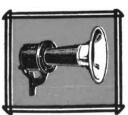
CHEAP signals—especially the cheap "vibrators" or "buzzers" with which the market is flooded—continually cause trouble. This you know.

When they go wrong they are a total loss.

No one is responsible—no one CAN be responsible. They are made cheaply. They are sold cheaply. You get what you pay for.

We believe it is better to sell you PERMANENT satisfaction and make you a booster—than to save you a few dollars and make you a kicker.

Klaxon owners are satisfied owners. To make them so and KEEP them so is the first obligation of this Company.

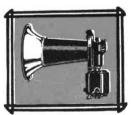


KLAYONET

Lovell-McConnell Mfg Company Newark, N.J., U.S.A.

KLAXON

"The Public Safety Signal"



KLAXC

This advertisement planned, written and set up entirely in the Klazon Factory. Type composition by the Klazon Fress with "Klazon" type especially designed by Goudy.

# Studebaker

# **Electrically Lighted Electrically Started**

WITH the Studebaker FOUR, what attitude could the dealer take other than one of serene confidence?

He offers a car electrically lighted and started a manufactured car—with complete Timken bearing equipment—left hand steer and outer control—the right "Four" at the right price, built by Studebaker.

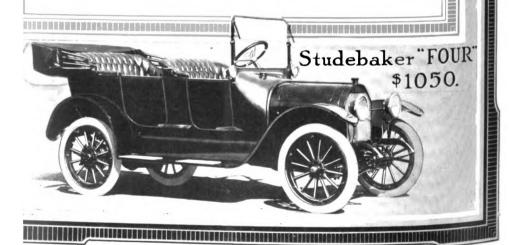
He knows that the man who is actually seeking the greatest value for his money is not going to find more elsewhere than the Studebaker FOUR proffers

#### **STUDEBAKER**

Detroit

FOUR Touring Car,		\$1050	"25"	Roadster		\$875
SIX Touring Car .		1575	"25"	Touring Car		885
SIX Landau-Roadste	r .	1800	"35"	Touring Car		1290
SIX Sedan		2250	"35"	Coupe .	-	1850
Six	c-Passe	nger SIX		. \$1550		

F. O. B Detroit



# MOTOR WORLD

A Trade Paper Giving the World's Motor New

Vol. XXXVIII

New York, March 12, 1914

Ten cents a c

# STANWELD Wire Wheels for FORDS

B ACKED by the reputation of the world's largest producers of automobile rims, these new wire wheels, designed especially for Ford cars, have already turned into the pockets of a thousand dealers, as good a profit as was ever earned by the sale of a high grade automobile accessory. Night and day, for a hundred days, we must work to produce those already ordered.

#### The Standard Welding Company

Pioneers and the World's Largest Producers of Rims for Motor-Driven Vehicles

Main Office and Factory: CLEVELAND

NEW YORK U. S. Express Bldg. CHICAGO Peoples Gas Bldg.

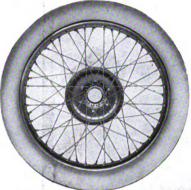
DETROIT Ford Bldg.

Distributors in Principal Cities



The leading makes of pneumatic tires are guaranteed only when applied to rims bearing one of the accompanying inspection marks. You'll find these marks on Stanweld Rims.





Stanweld Wirs Wheel for Ford Cars Light, Simple, Strong

The rim-part is made of steel according to our own rigid specifications. The spoke-punchings in the rim, as well as in the hub, are absolutely correct (a most important point in the construction of wire wheels.)

The spokes are made of the best wire stock procurable. They are swaged, or reinforced, at both ends, where the breakingtendency is greatest. The threecross method of lacing is used.

The hub is a steel-stamping--strong, well-made, and exceptionally light in weight.

The finished wheel is given two coats of the best enamel. Each coat is thoroughly baked on.

In fact, the whole wheel is at par with other Stanweld products, which have a known standard of value wherever motor vehicles are made, sold or used.

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# ult-Hartford HOCK ABSORBER

#### The Car Buyer Expects It

THE less a prospective purchaser knows about the mechanical details of a car, the more importance he is certain to attach to comfort.

The selling value of the *Truffault-Hartford Shock Absorber* is so completely recognized that leading automobile manufacturers include it as standard equipment. Every experienced motorist looks for and expects it on the car he buys.

Is it on the car you sell—or must you waste your time and try your customer's patience explaining why complete equipment is not supplied?

Four models ranging in price from \$16 to \$60 per set of four.

Write for further particulars

#### HARTFORD SUSPENSION CO.

F V HARTFORD Pres.

Office and Works: 142 Bay Street, Jersey City, N. J.

Manufacturers of Hartford Electric Starting and Lighting System





#### First Among Ball Bearings

SUPERIOR quality has placed R. I. V. Ball Bearings in a class by themselves and resulted in a steadily increased output year by year for the

#### "Here, There and Everywhere" Bearings

For the benefit of our New England customers and the trade in general, we are pleased to advise that an ample stock of all the principal commercial sizes is carried by

#### F. Shirley Boyd

#### 903 Boylston Street

Boston, Mass.

by whom R. I. V. Ball Bearing information and service will be cheerfully extended at the Boston Automobile Shows, March 7-21, in Booth No. 449. Your interest is invited.

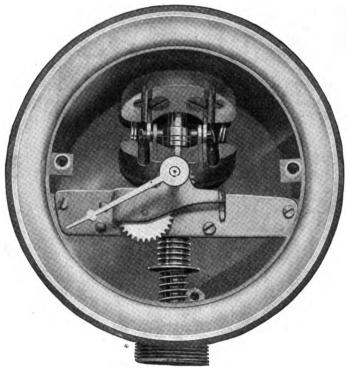
R. I. V. COMPANY

New York

**IMPORTED SINCE 1904** 

# ORBIN-BROWN SPEEDOMETER

"The Speedometer of Absolute Accuracy"



# Why The Centrifugal Principle?

- (1) At Washington, exhaustive tests made by the Bureau of Statistics proved that the *centrifugal* speedometer showed no appreciable variation when subjected to zero temperature as one extreme and 100° Fahrenheit as the other.
- (2) It has been repeatedly demonstrated that, unlike other speedometers, the indicator of the centrifugal speedometer does not oscillate when machine hits the rough spots.
- (3) The simplicity of the Centrifugal principle is an assurance of mechanical accuracy and durability.

Write for Catalog

# THE CORBIN SCREW CORPORATION

THE AMERICAN HARDWARE CORPORATION, Successors NEW BRITAIN, CONN.

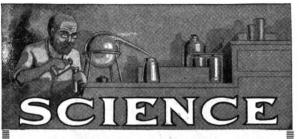
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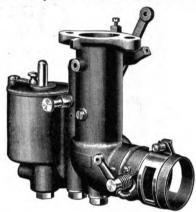
Philadelphia

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made the greatest step forward in carburetion since Krebs' early device when the Zenith was invented. And like practically all great inventions it was achieved by an amateur who started with an unbiased mind and applied common sense to the fundamentals of carburetion. Baverey's principle of "the compound nozzle" has made history.



The Endorsement Today 125,000 Zenith carof Europe buretors are being used in high grade foreign cars alone. Factories in France, Germany and England are supplying over 150 concerns—names known around the world as Europe's best. At the recent London Show 41.5% of all cars exhibited were Zenith equipped. At Paris, 46%—nearly half of all—carried this device of high efficiency. Europe's sanction comes slow—but means much.

The Carburetor with Trouble Left Out stant thought of American Engineers. The Zenith contains no moving parts, no valves, no springs. Once properly set, it has no wear and cannot be altered by the novice. It outlasts the car. Already eight well known American cars have chosen the Zenith above all as their standard equipment. Many more will follow as they test this famous device which for speed, for economy, for great flexibility is supreme. Science has given it the compound nozzle. Why not write for details?





# 66 Miles High

UR 1914 production of 50,000 cars, piled one on top of the other, would reach 350,000 feet or 66 miles in the air.

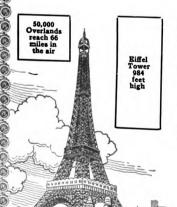
This is over 355 times as high as the Eiffel Tower in Paris, which is the tallest structure in the world.

This is over 466 times as tall as the Woolworth Building, in New York, or 630 times as high as the Washington Monument.

Also this is over 432 times the length of the Imperator.

Such figures are dazzling, but they help to prove the one great big point which we have always endeavored to drive home---the economy of producing automobiles in great quantities. Manufacturing, purchasing and marketing on a 50,000 car basis is infinitely less expensive than on the thousand car basis.

Catalogues free on request. Please address Dept. 50.



\$950

Completely Equipped

f. o. b. Toledo

SPECIFICATIONS:

Electric head, side, tail and dash lights Storage battery 35 horsepower motor 33 x 4 Q. D. tires

Stewart speedometer Mohair top, curtains and boot Clear-vision windshield Electric horn \$1075

with electric starter and generator f. o. b. Toledo

The Willys-Overland Company Toledo, Ohio

> Manufacturers of the famous Overland Delivery Wagoni, Garford and Willys-Utility Trucks. Full information on request.

# MOTORWORLD

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No. 12

# MANUFACTURERS POOL AXLE PATENTS IN ONE COMPANY

Packard, Peerless and American Ball
Bearing Merge Conflicting Axle
Claims Under One Head—To
License Other Makers

Although but little noise attended its incorporation and formal entry into the trade, the Kardo company, which has headquarters in Cleveland, O., this week loomed up as an important factor in the automobile industry; it is nothing more or less than a holding company for axle patents owned by the Packard Motor Car Co., the Peerless Motor Car Co. and the American Ball Bearing Co., and the patents are said to be far-reaching and comprehensive. The object of the pooling of interests was to eliminate friction due to the overlapping of the patents owned by the three corporations.

The capitalization of the company is \$1,500,000, and the officers are as follows: Alvan Macauley, vice-president and general manager of the Packard company, president; T. W. Frech, of the Peerless company, vice-president; F. C. Dorn, of the American Ball Bearing Co., secretary and treasurer; these men, together with Milton Tibbetts, Packard's patent counsel. F. S. Perry, of the Peerless company, and Walter C. Baker, of the American Ball Bearing Co., are the directors.

The dovetailing and overlapping patents which now are held by the Kardo company are Nos. 608,017—July 26, 1898; W. C. Baker; anti-friction bearing in front axle. 664,478—December 25, 1900; Hopewell: rear axle on removable pinion mounting. 705,304—July 22, 1902; Charles T. C. Sangster, Birmingham, Eng. adjustment of bevel gears. 783,-168—February 21, 1905; Baker; rear axle patent.

792.690—June 20, 1905; Alanson P. Brush, Detroit; bevel gear drive and compensating mechanism.

950,191—February 22, 1910; Charles Schmidt, Detroit; assigned to Packard Motor Car Co.; adjustment bevel gearing; improvement on Sangster patent. 1,013,450—January 2, 1912; rear axle transmission. Reissue 12,966—June 1, 1909; power transmission mechanism for automobiles; covers Peerless rear axle with universal joints and removable features. The company already has issued some licenses under the patents and will grant others.

#### Garford Takes Over Dean Electric.

Upon the recommendation of the Creditors' Protective Committee, which, for some time past, has been directing the operations of the Dean Electric Co., Elyria, Ohio, the offer of A. L. Garford to take over all of the property, assets, patents and good-will of the Dean company has been approved.

Garford, who is well known throughout the trade, is now organizing the Garford Mfg. Co., with a capital stock of \$500,000 preferred and \$800,000 common. Garford will be president of the new company, and A. G. Bean, vice-president and general manager. These men together with John Shirwin, president First National Bank, and First Trust & Savings Co., Cleveland, O., H. H. Johnson, A. L. Patrick, John P. Brophy, vice-president and general manager Cleveland Auto. Machine Co., and E. F. Allen, form the board of directors.

The proposition submitted by Garford provided for the exchange of preferred stock of the Garford Mfg. Co. for bonds of The Dean Electric Co. which were outstanding, amounting in total to \$250,000, to be put in the form of notes and 000; all creditors' claims, totaling \$427, are assumed by the Garford Mfg. Co. and will be liquidated over a period of five years.

The Garford Mfg. Co. will continue the manufacturing of telephones, switch-boards and electrical apparatus, and it will largely increase the automobile accessories department.

#### GARAGEMEN'S HOPES HIGH IN FIGHT ON SEPARATOR

Beaten in Court, They Appeal to New York City Authorities—Declare Device Both Inefficient and an Expense.

Although beaten in the Court of Appeals, the garagemen and dealers of New York City have not lost hope in their fight against the gasolene separator regulation, and plans are now under consideration for further action.

The present hopes of the garagemen are centered in the new administration which recently took the municipal reins in the metropolis, and instead of waging a legal battle the garagemen are negotiating with the fire commissioner and the municipal board of explosives, For this purpose four organizations in the city have joined forces; they are the New York Garage Association, which made and lost a test lawsuit in the matter; the New York Automobile Dealers' Association, the Brooklyn Motor Vehicle Dealers' Association and the Brooklyn Garagemen's Board of Trade. All told, there are between 150 and 200 business concerns represented.

The separators themselves consist of cylinders about the size of a barrel with an inlet at the top and an outlet at the bottom, a seive partition across about a foot from the top and an outlet in the side above the seive. They are designed to keep gasolene and oil from entering sewers and causing sewer explosions.

The man who first conceived the separator regulation had in mind several sewer explosions and thought they were due to gasolene vapor. The garagemen, however, contend that there are many other probable causes of such accidents and that the whole blame should not be saddled onto the garage. The garagemen contend not only that the gasolene from garages causes few, if any, of the

explosions, but that the separators are both expensive and inefficient when installed.

The devices vary in price from \$150 to \$300 and the work of installation in the sewer line makes the total cost anywhere from \$300 to \$1,000. To make their contentions logical, the garagemen are planning tests of their own to show wherein the separator could better be replaced with some other construction or device and the board of directors of the New York Garage Association met for that purpose this week.

The test made by the authorities consists in pouring five gallons of gasolene and five gallons of oil into about 50 gallons of water and pouring the whole into the sewer; with such a quantity and such a flow the separator does gather some gasolene and oil, but the garagemen claim that were the proportion made more near the actual condition and a gill of gasolene put into 50 gallons of water, the test would not show much in the way of results. The gasolene and oil are supposed to collect above the seive because of their lesser gravity and be drawn off.

This objection is supplemented by the statements of men who have used the separators and who say the seives are prone to become clogged with sand and dirt and flood the garage; it is said that some garagemen have put the separators in to comply with the law and then have disconnected them, because they were unable to make them operate satisfactorily.

There are about eight types which have been approved by the authorities and there are about 250 public garages in the city with about an equal number of private garages, to all of which the regulation applies; with installations averaging as low as \$500, this means a total expenditure of \$250,000.

What garagemen and dealers are trying to avoid is this expenditure; thus far about 10 per cent. of the garages have separators installed; those garagemen who have opened up within the last year or so have been obliged to put them in to have their building passed upon by the fire inspectors and some of the older garages have put them in as the easiest way out of the difficulty, but the matter generally has been held in abeyance by the authorities.

A corporation counsel in one of New York's five boroughs summoned a number of garagemen into police court for failing to have separators, but the fire department representative stated that he was "not ready to go on with the case," so no further prosecutions followed.

## HOUK AND BOWSER MAY BE CALLED TO EXPLAIN

Wheel and Pump Exhibits at Boston
Show But Show Is Not Sanctioned
by M. A. M.—No Intimation
as to the Outcome.

There are at the Boston show this week two accessory exhibits which may have to answer to the Motor and Accessory organization at its next monthly meeting, why they were at the show. The Boston show is a local show and was not sanctioned by the national accessory organization, which means that none of the members of the association had a right to exhibit directly or assist in the exhibition or in the expense of the same.

The two exhibitors are S. F. Bowser, Inc., maker of gasolene and oil storage systems, and the Houk Sales Company, distributor of the Houk wire wheel. At this time it is impossible to even intimate what action may be taken, as it may be shown that neither of these concerns was directly connected with the exhibits, even though their products were shown.

Previous to the Boston show the accessory organization took a mail vote of its members, asking them if they desired to exhibit at local shows, and the vote stood 260 or over opposed to such and only 15 in favor. It was because of this vote that the association ruled not to sanction the Boston show as an exhibition for its members.

The powers of the Motor and Accessory Association will be even greater in the future than in the past so far as regulation of exhibits at local shows is concerned. At the meeting of the National Automobile Chamber of Commerce, held a week ago, it was voted that in matters relative to exhibits of accessories, the National Chamber will recognize the ruling of the accessory organization. This means that next year it will be in the power of the accessory organization to indirectly control accessory exhibits in the local shows, in that any accessory maker exhibiting at a local show is not eligible to exhibit in the national shows at Chicago or New York. The penalty will be disbarment for 18 months from the national shows for exhibiting at an unsanctioned minor show.

From the vote of the accessory makers themselves it appears that they are opposed to numerous exhibits at minor shows, a fact more or less borne out by the recent action of many accessory concerns that did not exhibit at the recent national shows. With the bars placed thus higher it will be certain that accessory exhibits at local shows will be more and more in the hands of dealers who handle the respective accessories and not of the makers.

#### Case Funds Current Obligations.

For the purpose of reducing the current loans, the J. I. Case T. M. Co., Racine, Wis., has arranged for the marketing of \$12,000,000 of first mortgage 6 per cent. serial gold bonds dated February 1 and maturing in 12 equal annual amounts of \$1,000,000 each. The bonds are secured by a first mortgage on the company's Racine plant and other property and are further secured by the pledge with the trustee of \$12,000,000 of notes received in the ordinary course of business in payment for manufactured products.

In connection with the issue, the company makes public a statement of its finances and states that business is running 28 per cent. ahead of last year; during 1913 a foundry and machine-shop and power plant were erected at the "South Works."

The statement of the company's finances is as follows

Properties and plan Real estate, bldgs, as Loose equipment, f tures, etc Patents, designs, etc. Current assets: Inventories (below cos	nd machinery. urniture, fix	480,095.54
At Racine	\$5,887,821.98	
	\$11,166,483.09	•
Bills, notes and ac counts receivable	.15,109,671.08	
Miscellaneous Cash		27,230,271.89
Deferred charges to tions and miscellane		1,230,271.74
	•	\$39,166,829.92
Liab	ilities.	
Capital stock		

	******
Liabilities.	
Capital stock:         Preferred	0 - \$20,450,000.00
Bonded debt	3,585,519.39 1,274,335.27 1,856,975.26
•	\$39,166,829.92

#### Allison Heads Chicago Association.

At the annual meeting of the Chicago Automobile Association, which was held March 9th, H. M. Allison, Packard Motor Car Co., was elected president. The other officers elected are as follows: C. W. Stiger, Stromberg Motor Devices Co., vice-president; D. E. Whipple, Anderson Electric Car Co., secretary; Henry Paulman, Pierce-Arrow Motor Car Co., treasurer. These men, together with H. C. Tillotson, of the Stromberg company, and Ralph Temple. Jackson Motor Car Co., form the board of directors.

# DEAD ASSOCIATION SHOUTS "TRUST!" AT TIRE MAKERS

Charges Unfair Competition and Demands \$450,000 for "Being Forced
Out of Business"—Price-cutting Figures in Case.

The element of price cutting, so far as the tire trade is concerned, received prominence this week when the Automobile Cooperative Association of America, a corporation that went out of business in December, 1911, filed a suit in the United States District Court, Cleveland, O., against five of the largest tire manufacturing companies, charging them with forming a conspiracy and combination in restraint of the rubber trade, including the charge that these companies refused to sell tires to the Cooperative Association, on the ground that it was not good business for them to sell goods to an association that marketed them at reduced prices to its members.

The tire companies that have been served in the suit are B. F. Goodrich Co., Akron, O.; B. F. Goodrich Co., New York; Diamond Rubber Co., Akron, O.; United States Tire Co., New York, and the Republic Rubber Co., Youngstown, O., including the officers of these companies.

In its suit, the Automobile Cooperative Association of America, which had an existence from its organization in the fall of 1908 until its end in December, 1911, when it claims to have been compelled to give up business because of the attitude of the tire companies, bases its plea on the Sherman law, which specifies that anyone injured through unfair competition may collect treble damages, and so sues for \$450,000, this being three times the amount lost, which is claimed to have consisted of \$75,000 capital and estimated profits of \$75,000.

It is alleged in the petition that the manufacturers refused to sell to the cooperative association and influenced bigger jobbers to cut off supplies, that they
organized a dealers' protective association operated by their own "agents,
spies, and detectives" to learn who sold
the association its products; also, that
a boycott and blacklist were maintained
to help destroy the association and block
its business.

It is further alleged that the rubber companies acted in conjunction with a Dealers' Protective Association in New York City and that this association refused tires to any organization for prices less than those charged individual buyers.

When asked concerning the allegations the representatives of the large tire concerns all denied any knowledge of such a conspiracy or combination. W. K. Means of the Goodrich company, R. R. Glass of the Firestone and W. E. Hardy of the Diamond company agreed in this. T. L. Tobinson, president of the Republic Motor Co., denied having any knowledge of the Automobile Cooperative Association of America, and stated that his company had not any dealing with it. Some of its dealers had sold the association tires as shown by correspondence covering questions of adjustment in connection with same.

One tire man gave some light on the situation when he said:

"There was an effort on the part of the complainant to compel tire dealers to quote dealers' prices to them. It has been our policy with these cooperative companies to give them only consumers' prices, which greatly handicaps them. In most cases these concerns have only an office, do not carry any supply in stock and, because of the small overhead, are able to quote prices which regular dealers cannot compete with. I fail to see why we cannot quote any prices we desire, and it is to protect our regular trade that we will give only consumers' rates to such concerns."

The Automobile Cooperative Association of New York, according to Howard H. Williams, its New York counsel, had 1.500 members who paid the yearly membership fee of \$5, which was of the nature of stock on which a dividend was to be paid. It was organized in the fall of 1908 and was modeled after an English association of a similar cooperative nature. To finance itself \$75,000 in bonds were sold to various persons, mostly stockholders. An office in New York and Philadelphia was maintained. W. C. Dickerman was president for the 3 years. He is president now of the American Car & Foundry Co. Other attorneys in the case are James H. Fowler, Knoxville, Tenn., and C. E. Harrison, Columbus, O. During its existence the association did \$300.000 worth of business a year. Mr. Williams, in speaking of the association, said:

"The cooperative association was not organized as a price-cutting agency. Our list prices were the same as any dealer's, often higher because of the difficulties placed in our track by these manufacturers. But the member was to receive dividends each year, and from this could figure that he was receiving prices lower than list."

#### CONTRIBUTORY NEGLIGENCE PLEA VOID IN WISCONSIN

Common Law Plea Abolished by Workingmen's Compensation Act—Commission Orders Payment— Important Precedent.

Wisconsin motor car dealers and garagemen have just come to a sudden realization of their responsibility under the Wisconsin industrial insurance act, or workingmen's compensation law, by the action of the Wisconsin Industrial Commission in requiring the Janesville Motor Co., Janesville, Wis., to pay \$2,740.43 to the widow of Forest E. Gower, a chauffeur for the Janesville company, who was killed in an accident a short time ago. The order says the payment must be made at once and in a lump sum.

Gower was employed as a chauffeur and had taken a passenger from Janesville to Beloit, Wis. On his return trip he backed off a culvert, the machine was overturned, pinning him and a companion beneath. The companion escaped without injury but Gower was killed.

Under the Wisconsin law the common law defense of contributory negligence is abolished and the employer is required to pay a certain amount for various injuries on the death of an employe while on duty, regardless of any degree of negligence on the part of the employe that may have contributed to his injury or death. An employe is also presumed to be on duty practically from the time he steps on the premises of his employer.

The Gower case is of considerable importance, as it sets a precedent for action in all future accidents of this kind and gives employers of chauffeurs or others handling cars very little, if any, chance of escaping payment of heavy damages in case of the death of such employes while on duty, even if the employe is entirely to blame for the accident. It can readily be understood to what extent such negligence or carelessness might be carried in the case of motor car drivers, and the burden upon the employer might be almost unlimited.

The Wisconsin workmen's compensation act is declared to be probably the most progressive and advanced legislation of this character in the United States, and while it means a hardship on garagemen in some instances, it is generally accepted in a favorable light, inasmuch as it must necessarily be a broad measure which cannot exempt certain classes.

#### STUDEBAKER'S 1913 SALES IN EXCESS OF \$40,000,000

Past Year's Business 17 Per Cent.
Greater Than That of 1912—Net
Profit Nearly \$2,000,000—Statement of Finances.

The gross business of the Studebaker Corporation during the calendar year 1913, according to its report to its stockholders, totaled \$41,464,949.82 as compared with \$35,440,327.41 in 1912; this is an increase of 17 per cent. and is the largest volume of business in the history of the company. The net profits from all sources, after payment of interest, were \$1.772,473.65.

Concentration on two models—a "four" and a "six"—during the latter part of the year proved a stimulus to trade and prospects for 1914 are indicated in the business of January and February of this year. As compared with the first two months of 1913 the figures are: Cars produced, 5,703, 2,581, gain of 121 per cent. Cars sold for cash, 5,720, 3,019, gain of 89 per cent. Cash receipts, \$4,837.812.95, \$3,385,948.94, gain of 43 per cent.

The directors state that they believed the standardization of the product and the volume of sales were of more importance in 1913 than large profits and the expectation of a greater future business is held forth. Export business, which has been confined to only such cars as could be spared from the American market, has increased and, including shipments to Canada, was 16 per cent. of the total business done in the year 1913.

During the year the corporation acquired 34 per cent. of the capital stock of The Studebaker Corporation of Canada, Ltd., which, added to the 60 per cent. previously owned, makes the holdings in that company 94 per cent. This company manufactures and sells Studebaker automobiles in Canada. The sales of the vehicle division showed an increase of 2.8 per cent. over the year 1912.

December 31, 1913, the total funded and other debt of the corporation was \$14.062,848.31. The total quick assets of the corporation were \$25.941.866.32, or 184.5 per cent. of the liabilities, and in addition to these assets, the plants and property of the corporation, free and clear, exclusive of good-will, amounted to \$11.867.961.50.

The outstanding capital stock of the corporation, as of December 31, 1913, was, preferred, \$12,650,000; common, \$27,-931,600. In accordance with the charter provision, preferred stock to the amount of \$850,000 par value has been purchased and cancelled, at a cost of \$823,-724.49, which amount stands to the credit of "Special Surplus Account" in the appended tables.

There was spent for repairs and renewals and charged off to operating expenses \$1,097,452.87, compared with \$717.687.69 spent for the same purposes in 1912. These expenses were largely for buildings, machinery, tools and patterns. The details are shown in subjoined tables.

Profit and Loss Account. Net sales .....\$41,464,949.82 Deduct: Cost of Manufacture and selling and general expenses.\$38,697,491.70 Officers' salaries .... 137,431.98 Reserve for deprecia-230,356.84 39 065 280 51 Net earning on sales..... \$2.399.669.79 Other income:
Income from investments
Discount on preferred stock retired and dividends thereon prior to cancellation.... 47.615.38 83.465.40 Total net earnings ..... .... \$2,483,134.69 lotal net earnings
Deduct: Interest on 5
p. c. serial notes and
notes payable, less in
terest received...
Discount and commission on 5 p. c. serial
notes — proportion
written off.
Extraordinary expenses
charged off \$484,948,78 93 773 02 131,939,24 710,661.04 Net profit for the year ...... \$1,772,473.65

#### Aluminum Castings Moves to Detroit

The Aluminum Castings Co., which up to the present time has had its headquarters in Cleveland, will move its executive offices shortly to Detroit.

#### Assets.

Capital Investments: Trade name, good-will, patents, etc. Real estate, buildings, machinery, and equipment at South Bend, Ind., Detroit and Pontiac, Mich., Walkerville, Ont., and at branches: balance at January 1st. 1913	10,942,122.77	
<u>.</u>	12,450,790.38	
Reserve for depreciation:         \$159,395,70           Year 1911         \$159,395,70           Year 1912         193,076,34           Year 1913         230,356,84		
Foreign trade-marks		5,335.97
Total capital investments	-	£21 600 574 11
Current assets: Investments Inventories of raw material, work in progress, finished products and stores at factories and brancles, including expenditures on new models Accounts and notes receivable, less reserves for discounts and bad debts Deferred charges to operations: Insurance unexpired, interest prepaid and other items Discount and commission on 5 p. c. serial gold notes Suspense account, Flanders "20" replacements  402,495.61  Cash in banks, on hands and in trans	\$246,508.72 16.622,228.55	
sit	1,957,460.53	
Total current assets	• • • • • • • • • • • • • • • • • • • •	25,941,866.32
	-	57,622,440.43

Liabilities		
7 per cent. cumulative preferred stock: Authorized, 150,000 shares of \$100 each. Whereof issued Less: Retired under provision of charte	.\$15,000,000.00 . 13,500,000.00 r 850,000.00	
Outstanding		\$12,650,000.00
Common stock: Authorized and issued Less: In treasury	.\$30,000,000.00 2,068,400.00	
Outstanding		27,931,600.00
	•	\$40,581,600.00
Minority stockholders' interest in capital stoc of subsidiary companies Five per cent. serial gold notes:	l l	54,341.29
Authorized and issued	. \$8,000,000.00 . 1,200,000.00	6,800,000.00
Current liabilities:  Notes payable discounted at banks Deposits from dealers on contracts for sale of automobiles Accounts payable—Current Sundry reserves, including accrued pay rol	s . 249,593.62 2.098.134.46	
Total current liabilities	•	7,262,848.31 823,724.49
Balance at January 1st, 1913 Deduct: Loss on investment Flander	\$1,910,243.31	
Mfg. Co., liquidated by receivership	275,000.00	
Profit for year 1913, per profit and loss account	\$1,635,243.31 1,772,473.65	
D. 1	\$3,407,716.96	
Deduct: Four quarterly preferred dividends paid: \$229.162.50, \$229.162.50, \$229.50.50. \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375, \$221.375,	1,307,790.62	2.099.926 34 57.622.440.43
	\$	31,022,710

. . . . . . .





The National Supply Co., which is composed of several California automobile dealers, is placing gasolene, oil and supply stations throughout the State; three have been opened in Oakland, others in San Francisco, and arrangements have been made for the immediate opening of others in Fresno, Modesto, Bakersfield, Stockton and Sacramento. It is planned to sell materials at low cost. The personnel of the company includes these dealers: Cuyler Lee, Packard: Don Lee, Cadillac: P. T. Prather, manager for Don Lee, all of San Francisco; Earl Anthony and H. L. Arnold of Los Angeles.

The Baker Electric Sales Co., Inc., which has handled the Baker commercial vehicle and wholesale business in Chicago, has taken over the pleasure car retail end, heretofore conducted by the Ralph Temple Automobile Co. Temple will devote himself to his Jackson and Empire agencies.

The Capital Electric Co., Salt Lake City, a manufacturer and jobber of electrical supplies, has entered the commercial car retailing field; it has secured the G. M. C. agency for Utah, Idaho and Montana and will distribute these vehicles through its home and 14 branch offices.

George L. Sullivan, formerly manager of the Chicago Alco branch, has opened salesrooms in Jersey City, N. J., at 584 Summit avenue; he will handle Saxons in Hudson. Bergen and Passaic counties under the style George L. Sullivan, Inc., of which he is president and manager.

The Kaukana (Wis.) Farm Implement Co. has "gone into" automobiles; it has the Ford dealership in several surrounding towns and villages. Wm. Van Lieshout, Holland, Wis., has secured an interest in the company's automobile sales business.

H. D. Jenkins, formerly of Maquoketa, Ia.. has formed the H. D. Jenkins Motor Co., Clinton, in the same State; he has located at 430 North 2nd street and will sell Hupmobiles. He has maintained a similar agency for two years in Maquoketa.

J. T. Rose, who formerly represented the Wolverine Lubricants Co. in the city of Washington, has been appointed manager of that company's recently created Detroit branch. He is located in the Detroit Terminal Building.

J. J. Brennan, as president; J. M. Fitz-patrick, as vice-president, and J. E. Flaherty, as secretary and treasurer, have formed a dealership company in Fort Dodge, Ia. They will handle Lyons-Knight and Stearns-Knight.

W. W. Catlin has taken over the Phoenix (Ariz.) Buick agency, heretofore handled by the Southwestern Motor Co., of which R. D. Roper is proprietor; the garage end of the business has been leased to other parties.

Carl Farnham and Bernie Ewing have formed the Paris Auto Co., Paris, Ill. They will operate a garage and repairshop on North Main street, in the quarters formerly occupied by the Paris Electric Starter Co.

J. E. Bristol, formerly manager of the United Motors Syracuse Co., Syracuse, N. Y., has branched out for himself; he has taken the Mitchell agency and is located temporarily in the Overland-Syracuse garage.

Curtis and Joseph Mathews have opened salesrooms in Rushville, Ill., under the style Curtis Bros. They have the Herff-Brooks agency for seven counties and the Maxwell agency in Schuyler county.

A. H. Lewis, Halloway, Mich., and Charles Bartholomew, Palmyra, Mich., have formed a partnership; Lewis will operate a garage in connection with Bartholomew's plumbing and tinning busi-

Henry Bruns, Waterloo, Ia., and Henry Neverman, Denver, Ia.. have formed a copartnership and opened salesrooms in the latter town; they have the state agency for Patterson cars.

Donaldson Bros., having disposed of one garage business in Milford, Ia., have opened another near the town's railroad station; they also handle Paige and Chalmers cars.

H. C. Wieland, St. Louis, Mo., has opened an electric garage at 4919 Delmar boulevard; the location recently was vacated by the Rauch & Lang St.

F. E. Conrad and G. C. Horine have entered the trade in Reading, Pa., under

the style Universal Auto Repair Shop; they have located at 39 Peach street.

The Automobile Clearing House, 3952 Olive street, St. Louis, Mo., has become a dealer in new cars; it has the Haynes agency. W. B. Shields is manager.

Karl R. Rogers and Harold C. Rogers, Los Gatos, Cal., have taken over the garage business of W. H. Main; it is located on West Main street.

C. L. Nickerson, Union, Ia., has purchased an interest in the Yonkers & Roorick Garage, Conrad, Ia. He will manage the repair department.

A. E. Gansman, of the Motors Clearing House, 1512 Locust street, St. Louis, Mo., has entered the new car trade; he has the Coey cyclecar agency.

Evans & Snyder, Wellsboro, Pa., have opened a branch in Mansfield, in the same State; they stock Overland and Studebaker cars.

A. J. Gilbertson and Arnold A. Dietzel, Whitewater, Wis., have secured a site and are about to build a two-story garage, 60 x 70 feet.

Grant Haynie is about to open salesrooms in Hamilton, Mo., in the Tiffin building; he will handle the Overland and Reo.

J. C. Thompson, Jr., Lima, O., has secured permission to erect a garage on West Market street; it will cost \$10

Fish & Westerberg have taken over the Benicia Garage, Benicia, Cal. It formerly was owned by Charles Clyne.

Val Werner has opened salesrooms in Memphis, Tenn., at 342 Monroe street; he has the Grant agency.

J. H. McCaslin is erecting a garage in Knoxville, Tenn. The site is at the rear of the Scruggs building.

William Coburn has opened salesrooms in Lorain, O. He is handling the Empire and Marion.

Doleshaw & Neefe have entered the trade in Cottage Grove, Wis. They will handle Maxwells.

J. H. Blackburn, Beaumont, Tex., has opened salesrooms; he will handle Cadillacs.

Frank Grove has opened new salesrooms in Rossville, Ill. He will handle Fords.



#### U. S. RUBBER'S BUSINESS \$87,000,000 IN 9 MONTHS

Shortened Fiscal Year Shows Comparative Gain Over 1912-Subsidiaries Merged in Accounting-Assets \$200,000,000.

For the first time, the annual financial statement of the United States Rubber Co., which was issued on Thursday last, 5th inst., is a consolidated statement of the United States Rubber Co. with all of its subsidiaries, and covers only nine months activities, the fiscal year, which heretofore expired March 31st, having been revised to close December 31st. Comparison with the earnings of previous years therefore is difficult.

For the nine months ending December 31st, the company did a gross business of \$87,349,692, leaving the net income of \$9,677,532 prior to interest charges; deducting interest on the funded and floating debt, leaves a profit of \$7,140,125. 856, leaving a surplus for the period of \$1.811.268.

Concerning the statement, which is given in detail in the appended table, President Samuel P. Colt says:

"The company's financial position is strong, the cash on hand being approximately ten million dollars. Eliminating from the current liabilities, those which in the regular course of business would always be outstanding, namely, Merchandise Accounts Payable neither due nor subject to discount for prepayment, Acceptances given in connection with the importation of Crude Rubber and Accrued Interest, Taxes, etc., amounting together to \$6,101,379.87, the cash on hand is about 50 per cent. of the remaining current liabilities.

"The increase from about \$105.000,000 last year to about \$118,000,000 this year of plants, properties, etc., is occasioned by the inclusion of the Canadian plants and the Sumatra rubber plantations, with the enlargement of the Morgan & Wright tire plant at Detroit and some minor construction.

"The year 1913 was a year of declining prices. Consequently the same quantity of manufactured goods would represent a less amount in dollars and cents. The volume of business of the company as a whole was somewhat larger for the nine months of 1913 than for the corresponding period of 1912. Through the United States Tire Company there was a substantial increase in the sales.

"For the period named, the net profit

before deduction of interest charges was \$9,677,532.81, after deduction of interest charges \$7,140,125.01. The dividends declared during the period on the preferred stock and the common stock of the United States Rubber Company and minority stock of subsidiaries were \$5.328 .-856,50, leaving for the period a surplus of \$1,811,268.51. Of this surplus it is estimated that \$764,656.93 was earned in the first three months of the year 1913 by subsidiaries whose fiscal year formerly ended December 31st. This being deducted leaves \$1,046,611.58 as representing the surplus earnings for nine months from April 1st to December 31st, 1913, over dividends declared for the same period. Considering the sharp reduction in the prices of tires, the absence of snow during November and December, a general declining market for both crude rubber and manufactured goods, and business conditions throughout the counery-this statement of earnings may be considered gratifying.

'The common stock of the company is the same as on March 31st, 1913. Under The dividends paid amounted to \$5,328,- . the plan of conversion into first preferred stock, the second preferred stock has been reduced \$358,400 and there is now outstanding but \$622,800 of record preferred stock. Under the offering made to our stockholders in November last \$1,741,000 was added to the first preferred stock and \$39,800 was added from time to time in exchange for Rubber Goods preferred stock."

> The consolidated income statement for nine months, and in the case of certain subsidiaries for twelve months, follows:

Net Sales, Footwear, Tires, Me- chanical and Miscellaneous Deduct: Cost of Manufacture, Selling, Gen-	\$87,349,692.30
eral Expenses and Taxes	76,662.081.90
Operating Profits	\$10,687,610.40 97,141.69
Total Income	\$10,784,752.09
Less: Cash Discount allowed Customers for Prepayment (Net) \$624,241, 14, Deductions for Bad Debts \$311,87.31, Federal Income Tax 1913 \$171,102.83	1,107,219,28
Net Income prior to Interest	1,107,219.20
Interest on Funded and Floating	\$9,677,532.81
Deut	2,537,407.80
Net Profits	\$7,140,125.01
Dividends—United States Rubber Co. Dividends to Minority Stockholders R. G. M. Co. and Subsidiary Co.'s and Canadian Consolidated	\$5,138.092.00
Rubber Co. and Subsidiary Co	190,764.50
†Surplus for Period	\$1,811,268.51
surpluses of Subsidiary Compa- nies not heretofore consolidated and adjustment due to change of fiscal year to close.	89,600.00
31st (Net)	492,898.76 16,735,736,80
Surplus, December 31, 1913	

tOf this surplus \$10,939.98 is applicable to minority stock interests.

The company's statement of assets and liabilities is as follows:

Assets.	
Property, Plants and Investments,	
including Rubber Plantations Inventories, Manufactured Goods	\$119,882,026.92
Inventories, Manufactured Goods	, ,
and Material	36,343,324,28
	9,990,158 91
Notes and Loans Receivable	1,676,469.34
Accounts Receivable	22,926,827,53
Securities, including Stock of U. S.	,,
Accounts Receivable Securities, including Stock of U. S. Rubber Co. held by Subsidiary	
Companies	6,584,180,77
Companies	
Trustees	422,541.35
Miscellaneous	2,213,242.41
Total Assets	199.038,771.51
Liabilities.	
Capital Stock, First Preferred Capital Stock, Second Preferred	\$59,330,900.00
Capital Stock, Second Preferred	622,800.00
	36,000,000,00
Minority Rubber Goods Mfg Co.	
Stock. Preferred. \$1 556 300 00	
Common \$60,000 00 Subsidiary of	
Stock, Preferred, \$1,556,300.00, Common \$60,000.00,Subsidiary of Rubber Goods Co., \$37,500.00	1,653,800.00
Minority Canadian Consolidated	1,033,000.00
Minority Canadian Consolidated Rubber Co., Ltd., Stock, Pre- ferred \$225,880.00, Common	
famed \$200,000 C	
#210 420 00 Subsidiant of Cour	
\$219,420.00, Subsidiary of Canadian Co. \$9,200.	714 700 <b>00</b>
dian Co. \$9,200	514,500.00
Ten-Year 6% Collateral Trust	
Sinking Fund Gold Bonds, U.S.	
Sinking Fund Gold Bonds, U. S. R. Co.  Ten-Year 44/% Debentures, General Rubber Co.  Ten-Year 5% Debentures, Eureka Fire Hose Mfg. Co.  Forty-Year 6% Collateral Trust Gold Bonds, Canadian Consolidated Rubber Co., Ltd., 22,590.  800.00—less owned by Subsidiary Co. \$203,000.00	17,500,000.00
len-Year 43% Debentures, Gen-	
eral Rubber Co	9,000,000.00
ien i ear 3% Debentures, Eureka	074 000 44
Fire Hose Mig. Co	970,090.00
Forty Year 6% Collateral Trust	
Gold Bonds, Canadian Consoli-	
dated Rubber Co., Ltd., \$2,590.	
800.00—less owned by Subsidiary	2 107 900 06
	2,387,800.00
Mechanical Rubber Co. and N. Y.	*** *** **
Belting & Packing Co. Bonds	953,000.00
Notes and Loans Payable	19,905,837.00
Acceptances for Importations of	
Crude Rubber	2,275,430.63
Merchandise Accounts Payable	3,274,340.44
Accrued Interest Toyes etc	551,608.80
Reserve for Dividends	1,736,040.00
Reserve for Redemption of Bonds	382,295.77
Insurance Fund Reserve	619,570.49
Employers' Accident Fund	150,463.53
Reserve for Depreciation	7,000,000.00
Fixed Surpluses (Subsidiary Companies)	
panies)	15,080,880.78
*Surplus	19,129,504.07
	-00 020 271 51
Total Liabilities\$	199,038,//1.31

\*Of this surplus \$350,156.15 pertains to minority stock interests.

#### To Revive Amplex with Sleeve Motor.

It appears probable that a new Amplex company to produce a six-cylinder sleeve-valve motor car will rise from the ruins of the Amplex Motor Car Co., Mishawaka, Wis., which was offered for sale by W. M. Mix, the receiver, and bid in by H. M. Pulcifer, of Chicago, who made the only bid for the property. Pulcifer is at the head of a syndicate with \$500,000 capital which now is actively. engaged in the organization of a new company to be known as Amplex Mfg. Co., which, it is said, will reopen the plant shortly and commence building operations. It is understood that associated with Pulcifer in the venture are C. W. Microscope, of Chicago, and E. J. Gulick, formerly secretary and general manager of the old Amplex company, whose motor is to be used. Pulcifer is identified with the Rockford Sprinkler Co., Rockford, Ill. R. W. Randall, whowas manager of the plant during the receivership, will be retained in a similar capacity. At the time the receiver was placed in charge of affairs, the plant, machinery and tools were valued at \$75,000; the stock on hand—sufficient to build 15 Amplex cars—together with the merchandise, was inventoried at \$123,750. The plant has been closed for several months, but it is expected it will resume operations within two weeks.

#### Souther Vice-President of Ferro.

Following the retirement of C. B. Wilson from that company, Henry Souther, who for the past four years has been consulting engineer to the Standard Roller Bearing Co., Philadelphia, Pa., has been elected vice-president of the Ferro Machine & Foundry Co., Cleveland, O., and will assume the duties of that office immediately.

Souther's knowledge of metallurgy is varied and extensive, his business and professional career commencing with the Pennsylvania Steel Co., which he left in 1893 to become engineer for the Pope Mfg. Co., Hartford, Conn. In 1899 he opened an office at Hartford as a consulting engineer, and it was in this capacity that he became prominent in connection with the automobile and allied industries. He was consulting engineer to the Association of Licensed Automobile Manufacturers during the life of that organization and was president of the Society of Automobile Engineers during 1911.

#### New Factory Building for Stutz.

Ground has been purchased and plans prepared for a new factory for the Stutz Motor Car Co., in Indianapolis. The new building, which will cost more than \$100,000, is to be located at Tenth street and Capitol avenue, adjoining the present factory of the Stutz Auto Parts Co., which was taken over in the organization of the automobile company. The structure will be four stories in height, 80 x 204 feet, and is to be built of reinforced concrete with a brick facing. Building operations will be commenced about April 1st and it is expected that the company will move in about September 1st. The present retail salesroom of the Stutz company, which is with the Carl G. Fisher Auto Co., at 400 North Capitol avenue, will not be moved.

#### Wilson Heads Detroit Pneumatic.

At the annual meeting of the Detroit Pneumatic Tire Co., Detroit, Mich., E. W. Wilson was elected president. The other officers elected were as follows: Peter J. Jeup. vice-president; T. S. Sprague, secretary, and W. C. Morgan, treasurer. These men, together with Prank H. Watson and Arthur P. Hicks, form the board of directors.

# LONG LOSES FIRST ROUND OF ENCOUNTER TO KLAXON

Johns-Manville, Long Horn Distributer,
Fails in Appeal in Suit Based on
Advertising Contracts—Spar-

ton Also a Loser.

Declining to hold that the Lovell-Mc-Connell Mfg. Co. had gone outside its rights in certain advertising contracts. the Circuit Court of Appeals in New York City this week denied the request of the H. W. Johns-Manville Co., marketer of Long horns, for a preliminary injunction in an unfair competition suit which it instituted against the Klaxon company in the United States District Court in New York City; the latter court refused to grant a preliminary injunction, whereupon Johns-Manville appealed. The relief it asked was that the Klaxon company be enjoined from interfering with the advertising or sale of the Long horn, its contracts including the agreement that if Klaxon won its suits it might demand the exclusion of alleged infringers' advertising as a condition of the contract.

Following the denial of the preliminary injunction by the District Court, the Klaxon company moved for the dismissal of the case, but the matter has been held up pending the appeal.

Although the United States District Court apparently confused the Newtone and Sparton horns in Klaxon's suit against the Garland Automobile Co. and two others for infringement of the Klaxon patents, Nos. 923,048, 923,049 and 923,-122, in handling Sparton horns, the gist of a decision this week was that a decree would issue against the Garland company. If Garland is enjoined, cases against the Haynes Automobile Co. and Jackson Eastern Distributers, all three of New York City, will be automatically decided in like manner by agreement. The three were charged with using Sparton horns, an alleged infringing device.

#### Frederick J. Newman Passes Away.

After a long and varied career in the electric vehicle industry, Frederick J. Newman, president of the Chicago Electric Car Co., died at his home in Chicago, Ill., on Saturday morning, 7th inst. Mr. Newman's first entry into the electric vehicle industry was made in 1899, when he took up the duties of chief draftsman for the Fisher Mfg. Co., with which C. E. Woods, of electric vehicle fame, was connected. The perfection of a number of electric motor and controller patents

which were taken up by the Westinghouse Electric & Mfg. Co. induced Mr. Newman to sever his connection with the Fisher company, in 1900, to join forces with the Westinghouse interests. It is generally understood that he was responsible for that company's first standard line of motors and controllers for vehicles. After the reorganization of the Woods Motor Vehicle Co., in 1902, Mr. Newman left the Westinghouse company to become chief engineer of the Woods company. He remained with that concern until the summer of 1912, when he stepped into the presidency of the Chicago Electric Car Co., organized that year. Mr. Newman's death leaves his concern without a president and it is likely that the office will remain vacant temporarily.

#### Goodyear to Sell \$4,000,000 Stock.

By way of providing for additional working capital, made necessary by the steadily increasing demand for its products, stockholders of the Goodyear Tire & Rubber Co., Akron, O., at a special meeting held on March 3rd, unanimously approved the plan of the directors calling for the sale of stock to the amount of \$4,000,000. It is stated that already 80 per cent. of the stock to be offered has been subscribed for by present stockholders and it is expected that the balance will be taken by them before their rights to it expire. As an indication of the manner in which the company's business has grown, it is stated that during the past three months the number of tires sold, as compared with the same three months for the previous year, have increased by 47, 55 and 82 per cent., respectively. It is expected that the pneumatic tire business shortly will reach 10,000 tires a day.

#### Schmunk Peerless's Sales Manager.

Robert J. Schmunk, who for several years has been sales manager, and for the past year director of sales, for the Peerless Motor Car Co., Cleveland, O., has been advanced to the post of general sales manager with entire management of the marketing of the Peerless product. At the same time, T. W. Frech was elected vice-president and general manager, which is a new position in the Peerless company. Schmunk takes the place of E. J. Kulas, who has resigned from the Peerless company to become affiliated with the National Electric Lamp Co., Cleveland, O.

#### General Motors Lists \$4,000,000 Stock.

Following the application of the General Motors Co. to list more stock, the



governing committee of the New York Stock Exchange has listed the following securities:

General Motors Company \$112,800 voting trust certificates for common stock with authority to add \$3,975,500 of voting trust certificates for common stock and \$3,619,960 of voting trust certificates for preferred stock on official notice of issuance in exchange for outstanding common and preferred stock, respectively.

#### U. S. Express Plans to Quit Business.

Previous denials to the contrary, it became known this week that the United States Express Co., after 60 years of service, has decided to cease endeavoring to compete with the Parcel Post and will liquidate; its dividends have been reduced or passed and its shares have been selling at 65 and 70, whereas in 1910 they were 131. The company has 100,000 shares of stock and its assets are considered as worth between \$7,500,000 and \$10,000,000.

#### Texas Statement Reveals Prosperity.

According to a statement which just has been filed by the Texas Company, in connection with application to list additional stock, the company is in an exceptionally prosperous condition. The income statement for the six months ending December 31st, 1913, is as follows: Gross, \$12,217,198; net, \$3,883,973; sinking fund and depreciation, \$905.763: surplus, \$2,978,210; dividends, \$1,050,000; balance, \$1,928.210; previous surplus, \$7,-500,000; total surplus, \$9,428,210.

#### Tire Mold Case Must Be Tried Out.

The United States District Court in New York City this week denied a motion to dismiss the suit brought last fall by the De Laski & Thropp Circular Woven Tire Co. and the John E. Thropp's Sons Co. against the United States Tire Co. The suit charges infringement of patent No. 822,561, granted June 5, 1906, and covering an apparatus for holding a clincher tire during the molding of the tread.

A point brought up by the United States Tire in asking that the suit be dismissed was that a similar suit against the Fisk Rubber Co. was decided against the De Laski companies.

#### Gurney Bearing Opens Detroit Office.

A Detroit office for the Gurney Ball Bearing Co. has been opened in the Dime Bank Building, where an engineering department has been established in charge of Otto Brueenauer, western sales manager.

#### PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions Serve to Place Many Workers in New Places-Few Leave the Industry.

J. E. Morgan has been appointed assistant sales manager of the Standard Motor Truck Co., Detroit, Mich. Morgan formerly was connected with the Metzger Motor Car Co.

Frederick A. Curtis, formerly manager of the Chicago branch of the Knox Automobile Co., Springfield, Mass., has been appointed manager of that company's New York branch office.

W. J. Hough has been made manager of territorial sales of the R. C. Cornelius Co., Krit distributer in Toledo, O. Formerly he was connected with the Roberts-Toledo Co., Ford agents.

John A. Moore, traffic manager of the Maxwell Motor Co., Detroit, Mich., has resigned that office to take up a similar one with the Ajax-Grieb Co. and the Briscoe Motor Co. His headquarters will be in New York City.

Frank Witt, who at one time was one of the leading lights behind the wheel of a racing car, has been appointed sales manager of the Lavigne Cycle Car Co. Formerly he was a traveling representative for the Studebaker Corp.

F. K. Parke, formerly vice-president and general manager, and G. L. Brush, formerly assistant secretary of the Universal Motor Truck Co., Detroit, Mich., have severed their connection with that company and all its branches.

Wallace C. Hood will take up the duties of general sales manager of the Standard Motor Truck Co., Detroit. Hood's former connections embrace terms as sales manager for the Empire Automobile Co., Indianapolis, and the Wescott Motor Car Co., Richmond, Ind.

H. M. Davis, who for a number of years has been manager of the New York branch of the Knox Automobile Co., Springfield, Mass., has resigned that position to become manager of the factory branch which the Lyons-Atlas Co., Indianapolis, just has opened in New York City.

Howard Greer, Jr., has been appointed chief engineer of the McCord Mfg. Co., Detroit, Mich. Greer succeeds J. W. Cain, who has been intimately connected with the McCord company since its inception and during the past year has

been head of the engineering forces. It is stated that he will enter the railway supply business in Texas.

Geo. H. Strout has severed his connection with the Haynes Automobile Co., Kokomo, Ind., after having been that company's general sales manager during the past year. His resignation is take effect April 1st. He has not yet announced his plans for the future.

L. S. Weeks has joined forces with the Pasadena (Cal.) Motor Car Co., and hereafter will pilot the destinies of that firm, which handles Studebaker cars in Pasadena. The change follows nearly 15 years' activity in connection with the Studebaker sales force, the greater part of which time was spent as assistant manager of the Los Angeles branch.

Arthur Waterman, who for the past year has been sales manager for the G. C. Vaporizer Co., New York City, has been made vice-president and general manager of the Hartford Suspension Co., Jersey City, N. J. Waterman formerly was connected with the Hartford company, his service covering a number of years. He succeeds Alfred Reeves, who was elected manager of the Automobile Chamber of Commerce last week

#### One Company Cuts Insurance Rates.

Having withdrawn from the conference of insurance companies, the London & Lancashire Guarantee & Accident Co. of Canada has promulgated a new schedule of reduced rates for liability and property damage in automobiles. The reductions are from \$1 to \$3 on liability premiums; 16 horsepower cars are held at a \$35 rate for liability, 17-horsepower cars are dropped from \$30 to \$38. 18-horsepower cars from \$43 to \$41, and all others are reduced \$3. Property damage premiums are from 50 cents to \$1.50 less, according to the horsepower.

#### Hopewell Loses Its Patent Suit.

Reversing the decision of the United States District Court in Boston, the Circuit Court of Appeals for the First Circuit has decided that the Linscott Supply Co., Boston, did not infringe the patents of Hopewell Bros., Newton. Mass, makers of Hopewell tire cases. The Hopewell patents, 854,215 and 881,-411, are declared void of patentability.

#### Holmes Visiting Indiana Agents.

E. M. Holmes, Indianapolis distributer of Detroiters, will make a trip visiting all of his State agents this week. Much of his time will be spent in Madison and Delaware counties.



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1600 Broadway, New York City

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Editorial Department

DAVID BEECROFT, Managing Editor
S. P. McMINN R. W. SHERMAN HOWARD GREENE

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#### Show-Week Habit

Boston dealers have learned in the 12 years that they have been conducting a New England show the nice features of the show business as well as how to get all of their dealers and sub-dealers to The Hub during the week of the annual show.

These dealers—and there are now 45 of them in their local organization—have succeeded in building up the habit of going to the Boston show. This habit has been pretty generally established all through New England. It does not apply solely to motor car dealers, agents, garagemen or repairmen but to the people in general, who are fortunate enough to have the wherewithal to purchase motor cars. One of the oldest Boston dealers asserts that over 50 per cent. of the prospective buyers of high-class cars in the six States come to Boston for the show week.

They have got the Boston show-week habit.

When they come to town it is not all the show; they combine other business enterprises as well. If engaged in other industrial lines, then they transact their business in those lines also, but, fortunately, they make their other business conform to their motoring inclinations.

It is good—in fact, commendable—policy to get New Englanders into Boston on show week. It gets the motor car more and more into their minds. The very fact that they postpone other business until show week, shows how forcibly this habit has been instilled in their minds.

There are many other sections of the country where the dealers stage territorial shows, and if they have not already done so, let them start building up the show-week habit. Do this by setting the show dates well in advance, by generous advertising throughout the entire territory. Be sure you get into the minds of every dealer and sub-dealer the thought of the show and its date. Get them enthused so that they will talk the show idea in every one of their local centers? Give them plenty of time to do this. The results in attendance at the show will demonstrate that it is worth while to work up the show-week exhibit.

#### The Disputed Repair Bill

How many have had trouble with the disputed repair bill!

It is as old as the motor business. The owner brings his car in to be repaired. The repairman does the work and the driver or owner takes the car away entirely satisfied. This may be about the middle of the month. The bill does not go out until the end of the month. The work has not been a success. The car does not run, or other excuses are offered. The owner asks to compromise, and the repairman is often forced to make reductions in the charge because of the various statements made.

Will the following suggestion help the situation?

When the work is completed and the owner comes for the car, hand him the bill and then he must either acknowledge that the car is all right or not. He sees what the job costs, and if he objects to the charge let him do it then. This procedure will obviate one trouble—namely, that of the owner complaining later about the repair not being properly done.

It is good business for any repairman to know as soon as the job is completed what it has cost him, and it is meeting possible trouble right at once to let the car owner know his bill. If there have to be differences of opinion regarding the amount of the bill, let these differences be known before the owner has had a chance to take the car out, drive it several hundred miles and perhaps in the meantime start some new trouble.

We invite our readers to send us an expression of opinion on this subject. If you have evolved some other method that works to your entire satisfaction, let us have it.

#### For The Dealer

Motor World, in its last issue, started two new departments, primarily intended for the dealer, the repairman and garageman. One of these, ADVANCED MAINTENANCE, will appear weekly from this date forward and devote itself exclusively to the practical aspects of motor car repairing. It is written by a man who has graduated from the hard school of experience and is still strictly engaged in motor car repairing. He does not write from hearsay, but from what he has learned from experience, and from the best authorities on this work.

The other department deals with the legal aspects of handling an agency, a garage or a repair shop. It will appear weekly and will take up the legal phase of this work in a practical manner.

# SHIPPERS FIGHT PROPOSED CAR "SPOTTING" CHARGE

Appear Before Commerce Commission to Protest Charge for Freight Car Siding Service—Rate Making Principle Involved.

Growing out of the proposed increase of 5 per cent. in freight rates on Eastern railroads, the suggestion that has come before the Interstate Commerce Commission to the effect that the railroads assess a separate charge for the so-called "spotting" of freight cars, which apparently means placing them on the sidings of companies having private sidings, is of considerable importance, particularly to dealers who constantly receive large shipments of goods by freight. The proposed charge is 71/2 cents a ton, with a minimum of \$2 per car, and would represent nearly \$1,-500,000 annually in shipments of automobiles alone.

It is proposed to make this arbitrary charge for "spotting" cars as a means of producing sufficient additional revenue, instead of increasing the freight rate itself, in the event that the Interstate Commerce Commission decides that the railroads have made out a case which entitles them to a general increase in their transportation charges.

This plan, if adopted, it is explained by General Traffic Manager J. S. Marvin of the National Automobile Chamber of Commerce, "would inaugurate an entirely new principle of rate-making, inasmuch as it would separate the charges for the line haul from the terminal charges. Involved in this question are also the services provided by railroads in the loading and unloading of many kinds of freight, lighterage charges and the delivery of accumulated lots of less carload freight in the so-called 'ferry cars.'" All of these services have heretofore been included in the freight rate to or from the cities in which the factories are located.

Shipping interests appeared before the Interstate Commerce Commission at Washington February 27th to March 4th, giving evidence which would tend to show that factory terminals are an advantage to carriers and that the handling of carload lots to and from these sidings cannot be properly designated as free service. Shippers were a unit against the plan, and particularly against adopting it in haste and without investigation by the Commission at various points throughout the territory, which it is

MOTOR WORLD



March 7-14, Boston, Mass. — Boston Automobile Dealers' Association's 12th annual pleasure car show in Mechanics' Building.

March 9-14, Des Moines, Ia.—Automobile Dealers' Association's annual show.

March 14-21, Harrisburg, Pa.—Harrisburg Automobile Dealers' Association's fifth annual show.

March 16-21, Cedar Rapids, Ia.—Fifth annual show of the Cedar Rapids Automobile Dealers' Association in the Auditorium.

March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics' Building.

March 21-28, St. John, N. B.—New Brunswick Automobile Association's Maratime show in the Armoury.

March 27-28, Racine, Wis.—Racine Automobile & Motorcycle Association's show in Lakeside Auditorium.

April 19-29, France—Coupe de Tourisme, cyclecar and light car endurance contest.

May 25-26, Sicily—Automobile Club of Italy and Automobile Club of Sicily's Florio Cup race around Island of Sicily.

May 30, Indianapolis, Ind.—Annual International 500-mile Sweepstakes race on the Speedway.

June 1, Sicily—Automobile Club of Italy and Automobile Club of Sicily's Florio Cup race around Island of Sicily.

June 10-11, Isle of Man-Royal Automobile Club's tourist trophy race

June 23-26, Cape May, N. J. Society of Automobile Engineer's annual summer meeting at Cape May Hotel.

July 4, Lyons, France—Automobile Club of France's Grand Prix 41/1-liter race.

July 25-26, Belgium—Royal Automobile Club of Belgium's Belgian Grand Prize 2½- and 4-liter race.

Aug. 2-9, Grenoble—Automobile Club of France's six-day motorcycle and cyclecar reliability contest in French Alps.

Aug. first fortnight, Auvergne, France

L'Auto's Coupe de L'Auto 2½-liter
race.

Aug. 16, Le Mans, France-Automobile Club de la Sarthe's Coupe Internationale light car race, 1 liter, 400 maximum cylinder area and 350 to 500 kilos weight.

Aug. 17, Le Mans, France—Automobile Club de la Sarthe's Grand Prize de France for 4½-liter cars.

Aug. 28-29, Elgin, Ill.—Chicago Automobile Club's Elgin road races.

Sept. 2-7, Brescia, Italy—Automobile Club of Italy's 4½-liter Grand Prize.

Sept. 10-15, Berlin, Germany—German 4½-liter race.

Sept. 26-Oct. 6, Berlin, Germany-Annual show.

Oct. 1, Paris, France — Automobile Club of France's kerosene motor tests.

Oct. 16-26, Paris, France-Annual salon.

Nov. 6, London, Eng.—Olympia show.

claimed is the only way in which a proper understanding may be had and discrimination avoided.

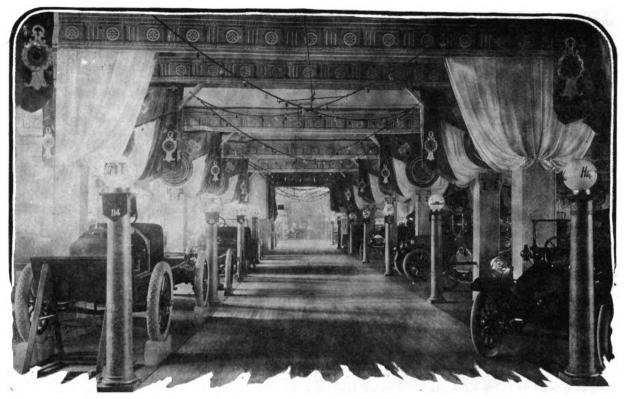
Marvin appeared for the National Automobile Chamber of Commerce at the hearings before the Commission. Further evidence will be taken by the Commission in connection with lighterage charges at New York and Chicago, tunnel service at the latter city and similar special conditions. The final determination of the matter is not expected for some weeks, and may not be reached for months.

#### Chicago Speedway Looms Large.

Provided no hitch develops, and so far things have gone along with exceptional smoothness, Chicago will this autumn have a speedway which will rival the oval at Indianapolis. The speedway is to be built by a syndicate headed by J. H. Palmer, of the J. H. Palmer Steel & Iron Co., who is authority for the statement that 500 acres of land midway between Madison and Chicago Heights on the proposed Lincoln Highway. Z miles from Chicago, already have been purchased and that work upon the undertaking will be commenced within 30 days.

The oval it is proposed to build will be two miles in length and 60 to 80 feet wide. In the center there is to be an aviation field and a stadium for athletic events.

The course is to be lined with a series a huge grandstands that will be capable of accommodating 100,000 spectators. Reinforced concrete will be the material employed in their construction. A race may be held in September.



VIEW THAT GREETED THE VISITOR'S EYE AS HE ENTERED THE GRAND HALL

#### BOSTON HAS WORLD'S BIGGEST DEALERS' SHOW

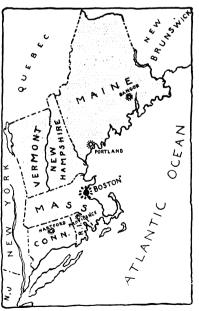
# Hub's Twelfth Annual Display Calls Forth 90 Dealers—Old Mechanics Building Transformed Into Veritable Motor Mart.

The biggest automobile dealers' show in the world is being held this week in Boston.

In real trade interest, in decorative effects, in actual retail sales and in bona fide enthusiasm, the exhibition which opened at 8 o'clock last Saturday evening in the Mechanics' Building in The Hub, is in a class of its own; not only this, but it justly lays claim to being America's premier motor car show. There are more exhibitors than at the national shows in New York or Chicago.

At the New York show there were 82 different makes of cars; in Chicago there were 86; in Boston there are 90, and this four score and ten exhibits holds 260 cars and 27 chassis, the total including about a dozen electrics, the same number of cyclecars, and one group of steamers. This week is devoted to pleasure cars; next week the commercial cars will hold forth.

But what differentiates the Boston



GREAT TERRITORY FROM WHICH BOS-TON SHOW DRAWS

show is its dealer aspect; it is promoted by the Boston Automobile Dealers' Association, the space is bought by dealers, and the dealers and their salesmen man the exhibits.

In New England it is not "the Boston show" but "the show."

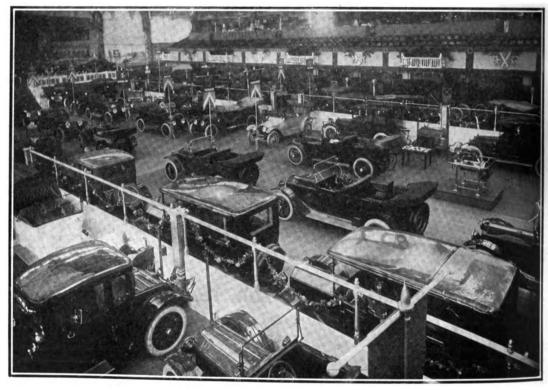
In that great stretch of territory which begins with a vaguely defined border in northern New Brunswick and extends westward to the New York State line, and is on other sides hemmed in by Canada and the Atlantic Ocean, there are but four other automobile shows.

Bangor, Me., with 24,803 population, and Portland, with 60,000 inhabitants, are the only shows held in New England above the northern Connecticut line; Hartford and Providence each have one, but all are subsidiary to the Hub's exhibition. Through the whole year the dealers and subdealers plan on "going to the show."

With many of the smaller merchandizers in the remote districts of northern New England it is an annual event; it means a combined business and pleasure expedition to the "big city," and by Monday, the second night of the show, the hotels of Boston are filled with dealers and salesmen from the whole territory. It is a veritable pilgrimage. Some of the dealers may sell but a half dozens which are filling the land of the Pilgrim Fathers with cars.

the advent of the touring and weather which New England boasts, the close of the show nets sales of from a few up to 25, 30 and more of each make of car.

But while Boston boasts of its highwater record of enthusiasm, of the number of exhibitors and the number of cars, it still falls short-of being an exhibit of all American makes, because there are over three score and ten different makes of American gasolene cars not on exhibinational accessory organization of America, has not been a party to the show, and consequently none of its members are exhibiting. Whatever accessories are shown are displayed by local dealers, and the majority are small devices and tools, many local supply companies being included in the list. Few of the leading makes of tires are seen, there are half a dozeh different makes of carburetters, one or two magnetos, and a good



GENERAL VIEW OF EXHIBITION HALL AS IT APPEARS FROM GALLERY

When the dealer enters the exhibition building his first move is to locate the space of the car he sells; generally it is that of a territorial distributer. With many of the out-of-town dealers come from one to a half dozen prospects; some of the prospects travel at the expense of the dealer while others join in the spirit of the trip and pay their own expenses for the pleasure they get out of it. Either way it draws the dealer and prospect closer together.

At the national shows in New York and Chicago, which are patronized by manufacturers, the retail business is a subsidiary feature; in Boston it is paramount. With 50 per cent, of the car buying public gathered from the entire section of country, with winter nearly ejected from the lap of spring, and with the touch of balminess in the air heralding

tion and many makes of electrics. Boston has few cars not previously scen this year at either New York or Chicago, these being Lenox, of local manufacture, Moyer and S. G. V. The Stanley steamer is seen here, being manufactured in the outskirts of Boston, and not exhibited at other shows.

Foreign cars have a small representation, Renault and Fiat being the only exhibitors. One year ago the American importers held a salon in the grand ball room of the Copley Plaza Hotel, but failure to effect satisfactory arrangements for such this year, leaves Boston with a smaller representation of imported cars than for some years.

From an accessory point of view the show is largely a local one, in that this is the first year when the Motor and Accessory Manufacturers' Association, the exhibit of gasolene storage systems, a good exhibit of oils and greases, and a good display of motorcycles and factory and garage machinery, the latter being in the basement, where multiple drills, broaching machines, grinders and a host of other huge factory machines are shown in operation.

#### BARREN WALLS BECOME ROME AND VENICE FOR TWO WEEKS

Boston has always boasted of its decorations and as usual has right to high honors in this respect, for the decorative feature is a suitable one and is well balanced throughout the maze of buildings and rooms that house the cars and accessories. Before attempting to describe the scheme, keep in mind that the Mechanics' Building in which the show is held is a right angle triangle with a long

#### MOTOR WORLD

base and a perpendicular about one-half this. This building is in reality two buildings, although to all intents and puprposes but one. It is two in that about one-third of it is cut off and forms what is called "Grand Hall" and which is separated from the remainder by thick walls with suitable doors. The other hall is known as Exhibition Hall.

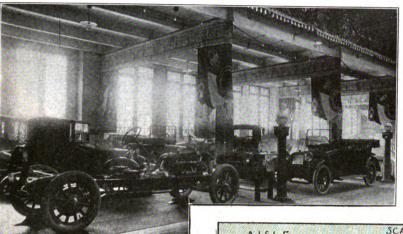
This triangular building has a basement, a main floor and some second floor and gallery spaces. The main floor is all given over to cars; the basement is half cars and the remainder motorcycles, accessories and machinery; and the balconies and second floor are accessories and a few cars.

The decoration scheme in the Grand

Hall is Venetian and in the Exhibition Hall Roman.

Grand Hall is a huge rectangle with a stage at one end and a gallery around three sides. The Venetian scheme is worked out by the entire stage setting being a Venetian building scene and the opposite end of the hall showing the Grand Canal, Venice, with its buildings along each side of it. Along the face of the gallery there are small Venetian balconies filled with flowers. From the ceiling are suspended huge chandeliers festooned with ropes of vari-colored lights. The entire effect is pleasing.

In Exhibition Hall the Roman scheme of decoration consists of entablatures in the Roman style which conceal the massive beams supporting the ceiling. Masking pieces cover the pillars and the walls are decorated with large paintings of motor scenes. At the corner of each exhibit space stand plain Roman pillars with illumined frosted globes on top, each globe carrying the name of the exhibit

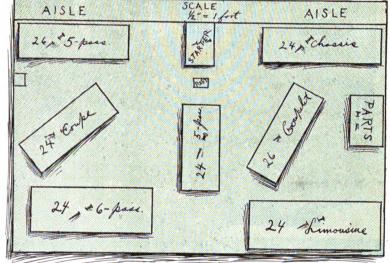


#### CHALMERS DEALER MAPPED HIS CAR EXHIBIT ON PAPER

The Whitten-Gilmore Co., Chalmers dealer, was alloted a double space, 34 feet deep and 44 feet front. E. A. Gilmore planned the exhibit in his salesroom office.

On a sheet of paper 22 inches long and 17 inches wide he mapped out his space, allowing ½ inch to the foot. He then cut strips of paper to correspond to the overall sizes of the cars, allowing ½ inch to the foot.

These papers he labeled and placed on the space map; his first arrangement, of course, was not just right, so he moved things around and kept moving them until he effected the arrangement that is shown in the map at the right. His object was to have his exhibit so all the cars could be seen from the aisle, and how well he succeeded is shown by the photograph of his display.



#### GETTING FULL VALUE FROM EXHIBIT SPACE

#### How Some of the Boston Dealers Planned Skilfully That Their Displays Might Show to Greatest Possible Advantage.

Many a dealer pays good money for a show window and doesn't get full value out of it, but in Boston the trend is the other way, and this same trend caused study in planning on the part of the dealers who parted with good money for space at the show; as John H. Johnson, the Buick man, said, "What's the use of paying for a lot of space if you aren't going to make good use of it?"—and he did.

Before the show opened some of the better sales generals began to put in their exhibits; of course, they couldn't get into the hall, but they did have blue prints of the floor. E. A. Gilmore, of

Whitten-Gilmore, Chalmers dealer, mapped out his whole exhibit beforehand in a manner which saved a lot of work; when the cars were rolled into the building they were rolled in in proper order, were placed according to the plan—and they fit in every way.

Gilmore took a sheet of paper about







20 inches long and laid out his floor space—as is illustrated herewith—allowing one-half inch on the paper to a foot on the hall floor. One side he marked "aisle" and he even drew in the posts. Next he cut out pieces of paper to correspond to the overall size of the cars he wished to show, again making the scale one-half inch to a foot.

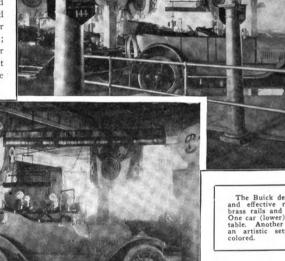
Spreading the paper out on his desk, he arranged his exhibit. A primary object was to arrange the cars in such a way that a man in the aisle could see through the whole exhibit. Therefore, he placed a "24 limousine" at the back again the wall in one corner as the illustration shows. Other cars were placed according to the same method, and when a car seemed better in another place the piece of paper was shifted; shifting pieces of paper is much better than shifting cars. The starter exhibit was located at the front center and the

on Massachusetts avenue. This consists of two 3-foot iron wheels, one planted on the floor and the other turning upon it on ball bearings; the upper wheel has gears and is turned by a spur connected to a shaft which extended through the floor to a motor bolted against the basement ceiling., The mechanism was encased and invisible.

The whole exhibit was enclosed in a

even as much as body lines was shown by the little knots of people who gathered around so simple a thing as a motor, or chassis with lights hanging above it. Fiat, Pope and Premier won such audiences.

Placing of cars was the paramount problem; each dealer had just so much space and endeavored to derive the greatest advantage possible from it. The



The Buick dealer achieved a spectacular and effective result with plush carpets, brass rails and craftsman overhead lights. One car (lower) revolved slowly on a turntable. Another (upper) was fenced off in an artistic setting. Both were cream-colored.

parts exhibit at one side. When a car was rightly located the paper that represented it was pinned in place. Sufficient space was left between cars; for instance, between the "25 6-pass." at the left rear and the "24 coupe" ruler measurements show there is two feet at the rears and 11 feet at the fronts. When the cars were placed a man in the aisle could see into the whole exhibit.

To arrest attention was the theme in all the exhibit planning. Poor arrangement lessens the value of the display and much study was put into the 90 exhibits. As an attention winner the Buick Boston Co.'s booth probably was as effective and pretentious as anything at the show. John H. Johnson, the proprietor, went to great expense. His feature was a car revolving on a turntable which he uses at times in his salesrooms

brass tubing fence, with a dainty pink plush carpet to harmonize with the cream coloring of the car. Casting light down upon the turning car, two hanging troughs in craftsman style with amber reflectors set the car off most admirably. At an opposite corner another car of similar color-both distinctively show cars-was railed off within a brass tubing fence and reposed on a buff plush carpet. More hanging fixtures furnished illumination. Johnson did not possess figures as to what the whole had cost him, but estimated the reproduction of his "fixings" at \$1,000. It really cost Johnson less as he borrowed much of the scenery from his salesroom.

Aside from these, the most attention was wen by mechanical exhibits; lecturers had their audiences, but that the mechanical interests the New Englander

Locomobile cars were well positioned, each part of the exhibit being visible from the front, with ample room within for visitors. Peerless adopted a different plan; its cars were placed in two straight lines with a broad aisle between, the showiest car at the front. A ciever effect was achieved at one end of the exhibit which was walled up with a settee and the whole transformed into a pretty "cosy corner" with mahogany furniture and an art glass table lamp. It was a most effective place to talk business and fitted in well with the Peerless atmosphere. There was, it is true, a rather straight-line effect in the lines of cars, but there also was the big, broad aisle, which was a distinct advantage Winton, across the way, placed its cars similarly but with less rigidity.

The White cars in the Exhibition Hall were not well arranged. Closed cars obscured views and rigidity was apparent. The high closed cars at the rear and a less angular arrangement at the edges of the space would have improved matters. W. E. Wing, Marmon, achieved a clever arrangement with the added ad-

vantage that his "show" could be looked down upon from the gallery. Ford put four cars in a big space and the plan worked out well; there was an abundance of room for the visitors and each car stood out markedly.

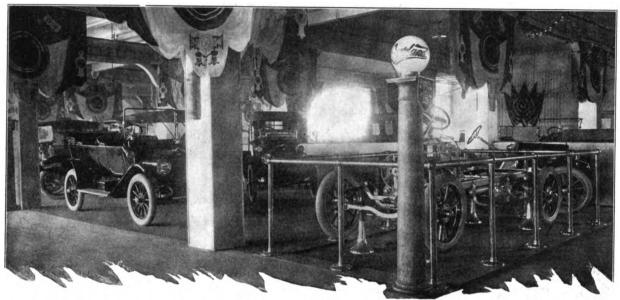
Often times it seemed to the visitor that an arrangement was poor when in reality it was intentional; one such instance was in the Pierce-Arrow space where entrance at the ends was blocked by cars in close position. But Eliot B.

Ware, sales manager for the J. W. Maguire Co., explained that he wanted people to enter the exhibit from the front and did not want them crowding in through and between the end cars when salesmen were in those positions talking to prospects.

Harry Fosdick, Lozier distributer, had a small triangular plot of floor but produced an effective arrangement, as is illustrated.

Many little artistic touches helped to

enliven exhibits. Whitten-Gilmore, having taken the Saxon out of their Chalmers exhibit so it would not draw attention from the larger cars, placed it alone in a small space with a wide white ribbon fixed diagonally across the hood. On the Cadillac green placards with white lettering were placed on the radiators giving information about the car, and green ribbons were rosetted at the radiator caps and draped backward to the rear hood fasteners.



CONNELL & McKONE MADE THEIR BRASS-RAILED OVERLAND CHASSIS THE FEATURE OF THEIR DISPLAY

#### HOW BOSTON DEALERS PLANNED SHOW WORK

# Extra Effort Centered in Making the Exhibition a Real Sales Campaign—Manner in Which Plans Were Worked Out.

Presented with an unusual opportunity for getting in touch with a host of the livest prospects and with an opportunity for placing his complete line in full view of the public, each Boston dealer is taking full advantage of them and has planned his work for show week with exactness. It is not a case of "place the cars and let the public look at them"; rather, it is a case of placing a group of trained salesmen in the exhibit not only to show the cars but to sell them.

As the members of a baseball team work in harmony and by a plan, not in a hit-or-miss effort, some of the dealers have gone so far as to map out a special campaign of strategy for the show; every salesman and dealer is on his mettle, the regular work-a-day methods and

principles are embodied in the show work, but in numerous instances the director of the plan has gone still further and incorporated even a greater precision. In addition, there are special advertising and publicity efforts.

# PLAN OF WHITTEN-GILMORE'S SALESMEN'S TIME FOR A WEEK Lawrence. 10 to 12 1 to 5 6:30 to 10:30 Proctor... 10 to 12 2 to 6:30 8:00 to 10:30 Jacobs... 10 to 1 2 to 6:30 8:00 to 10:30

Brannan... 10 to 1

Turner.... 10 to 1

2 to 6:30 8:00 to 10:30 2 to 6:30 8:00 to 10:30

One such instance is found in the organization of the Buick Boston Co., of which John H. Johnson is the proprietor; Johnson is especially skilful in display and sales planning and for show

week developed a plan which he considered would secure the greatest results.

He has a dozen salesmen, and they include men of varying capabilities; some are excellent "explainers" and can work a prospect along through the preliminary stages but are not so strong on "closing" as are others. Were one man permitted to carry a sale through without any assistance he might or might not make it; he might arrive at a point where he would realize that his efforts were likely to prove unavailing in closing the sale; in fact, just such things have happened in more than one salesroom.

Also, were the salesmen turned loose in the exhibit with no instructions as to what to do the man who stopped to look at a five-passenter touring car might receive undue attention, while the man who looked at a runabout might be slighted.

Considering all these points, Johnson formulated a definite sales plan. It was this: Every man must appear in tuxedo dress with the exception of Saturday night, which is a "paper" night and is distinguised by a large attendance wit few sales. Each car has a certain man assigned to it; the duties of the salesman are to confine his attentions to that model and see that no one who stops to look at it fails to receive attention. Two of Johnson's best "closers" are salesmen at large and are stationed on no particular car. The other salesmen secure the "leads" on the prospects and carry them through to a sale if they can, but if they believe they require asalloting its salesmen's time during the week permits of no inattention at the exhibit; Sales Manager F. P. Allen lined up the five salesmen on a sheet of paper and mapped out the time, so that some one always is on hand and everybody is in the exhibit after 8 o'clock in the evening. The salesmen are directed not to congregate in one spot but to keep "scattered" and to give polite attention to every interested visitor. Tuxedo or

where many use page space the dealer who does not use big space is overshadowed. The theory is that smaller space used consistently in other issues is more effective.

There is reproduced elsewhere samples of the Whitten-Gilmore advertising; on the Saturday night of the show an extra large space was used; this was two columns by 14 inches deep and was carried in two papers. During show week, how-



The difference that position makes. Both pictures are taken from exactly the same angle. With the Saxon straight alongside (upper) the view to one coming down the aisle is much less attractive than with the car at an angle (lower). The lower arrangement was used.

moned by a sort of understood signal and is introduced to the prospect, whereupon the "closer" assumes charge and attempts to close the sale.

The salesman who summoned the "closer" may or may not retire from the sale; if he has no other prospect in view, if he has nothing else to do or if his presence is no handicap he may remain. But whatever he does-including the summoning of the "closer"-the work is so well performed that the prospect does not realize what has been going on. Of course, a man is stationed at a certain car, but it does not mean that he cannot go to another car if he has the time and sees that the salesman on another car has more visitors than he can handle. Johnson attaches more importance to the volume of sales than to who makes them. Also, each man is placed on a different can each night, that he may not develop one-car tendencies.

The Witten-Gilmore Co.'s method of

dress suits are required every night except Saturday. The salesmen wear carnations and no hats.

The directions further are that any man who seems interested in a used car shall be sent to the salesrooms on Commonwealth avenue in one of the demonstrating cars which are kept in front of the show building continuously. The used car salesmen are at the salesrooms during the week and handle what new car business comes in. It generally is little because of the manner in which interest centers at the show.

As an adjunct of its show sales work Witten-Gilmore makes its newspaper advertising play a part in the show campaign: this company advertises consistently at all times, but prepared special copy for this occasion. B. A. Gilmore, treasurer of the agency, said the company's policy is never to use Sunday or special editions of newspapers because of the belief that in special numbers

ever, the company's regular and smaller space was used—2 columns by inches. In the Saturday night space more than two-thirds was devoted to Chalmers features and at the bottom were two paragraphs hitching the copy up with the show. In add advertising white space was used unsparingly.

During the week the advertisements were run in two morning and three evening papers, the insertions being alternated so that some one paper carried a Chalmers "ad" every day; this small copy was given position when possible and in few words each "ad" hammered home a Chalmers selling point and emphasized the fact that the Chalmers cars would be located in spaces 108-9 at the show. Lee Anderson, factory advertising manager of the Chalmers, attended the show to assist the dealers in their sales and advertising work.

The "lecturer" who explained things to the public in New York and Chicago was on hand in Boston and proved an invaluable aid in the dealers' show campaign plans; in the case of the Chalmers this man again laid emphasis on the points that had been emphasized in the advertising. He talked every-day Eng-

lish. When he delved into the water circulating system with its whys and wherefores and the quality of the steel of the valves he poined effectively with his pencil and gave a regular kindergarten course in mechanics.

About this man there was always a crowd; a Motor World representative

counted 42 persons listening attentively at one time, and the same condition prevailed at the Cadillac exhibit—Cadillac Motor Car Co.—where a lecturer talked over an uncovered motor and chassis. These individuals, of course, were factory men and trained for their work, but in smaller shows where a factory

man might not be procurable a wideawake salesman could do the same work nearly as effectively.

Connell & McKone, Overland dealers, had six graduate salesmen from the Willys-Overland school in addition to their regular salesmen, and few persons got away without a "How d' do.'

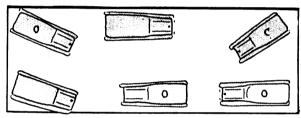
#### FEW CHANGES IN CARS NOT SHOWN BEFORE

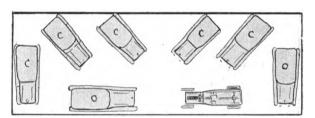
#### Little More Than Refinement Revealed by Four Brands That Make Their First Public Appearance of the Year.

Boston has always been renowned for its large exhibits of cars and this year is not any exception. Chalmers shows six cars and a chassis; Buick has seven cars and a chassis; Fiat has five and a chassis; Packard and Cadillac, shown side by sides on the stage in Grand Hall, each

tocrats of the automobile world, there are only four makes of cars in the show which did not appear in New York or Chicago.

These four are, the Lenox, which is a strictly local product, made by the Lenox Motor Car Co., of Boston, Mass.; the has taken unto itself a six-cylinder brother, which, as a matter of course, has assumed to the leadership of the line. Otherwise there have been no radical changes in construction over the 1913 design, except that a new front axle has been adopted.





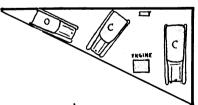
THE WINTONS (LEFT) AFFORDED PLENTY OF ROOM; STRAIGHT LINE EFFECTS WERE AVOIDED. PIERCE ARROW (RIGHT) CLOSED UP THE BACK AND ENDS TO MAKE VISITORS ENTER AT FRONT. AISLES AT BOTTOM OF PLANS

show six cars and a chassis; White has seven cars in its space on the main floor in the Grand Hall and four in an oxer-flow space in the basement, giving it the show record of eleven; Pierce-Arrow shows seven and a chassis; Locomobile shows six and a chassis; Peerless and Winton show six cars each; and Regal shows seven cars in its basement space. If necessary, the Boston dealers could reduce the size of the exhibit spaces and increase the number of exhibitors to over 100.

At the same time, the manufacturers have, in a great many cases, virtually transplanted the exhibits which graced the national shows in New York and Chicago; hence there is much that is familiar to greet the eyes of those who saunter up and down the broad aisles.

As has been the case in years gone by, there is not a great deal in the way of cars that is really new; that is to say, cars that make their initial appearance of the year. Not counting several brands of cyclecars that have been sandwiched in among the full-fledged aris-

Stanley steamer, which is the sole remaining exponent of its kind, and which also is a local product, being produced by the Stanley Motor Carriage Co., Newton, Mass.; the Moyer, which is manufactured by H. A. Moyer, Syracuse, N. Y., and which is not so local, although



WHAT LOZIER DID WITH A SMALL TRIANGULAR SPACE

it has never been exhibited at either of the national shows; and the S. G. V. The latter is produced by the S. G. V. Co., Reading, Pa.

But even though these four brands of cars are new to show goers in concrete, there is not a great deal that is new in them individually. Of them, the Moyer is distinct, by reason of the fact that it The new axle is designed to give what is known as a castor effect to the steering, the steering knuckles being so placed that a straight line through the center of the king bolt will strike the ground at the point of tangency of the tire with the ground at the center of the tire. These king bolts, by the way, have been made of 3.5 nickel steel and are hardened, ground and lapped; they are % of an inch in diameter and have nickel steel bushings at the top and bottom of the axle forks and a ball thrust bearing in the top of the nut.

The six-cylinder model, which is new this season, is a seven-passenger touring car fitted with a Moyer  $4\frac{1}{2} \times 5$  inch Thead motor, which is supported at three points in the chassis. It incorporates the U. S. L. lighting and starting system, other details of the transmission mechanism including cone clutch, full floating rear axle and three-speed gearset. The wheelbase is 135 inches on tires measuring 35 x  $4\frac{1}{2}$  inches. Except for a difference in the size of parts commensurate with the power developed by the engines,

the four-cylinder model is practically identical with the six.

The products of the Lenox companytwo models, a four and a six-exhibit practically no change from their previous construction. In the four-cylinder model, the cylinders are block cast and measure 41/4 x 51/2 inches, the nominal rating being 40 horsepower. The sixcylinder motor, on the other hand, has its cylinders cast in threes, the bore and stroke measuring 4 and 5 inches, respectively; the horsepower rating is 60.

The Stanley steamer has existed so long in what is virtually its present

which measure 1.8125 inches in diameter. Quite as a matter of course, the U. S. L. lighting and starting system has been retained. A five-seated inside driven coupe, or landaulet, which did not previously find a place in the line, has been added.

#### HOW THE TICKET PROBLEM BOTHERED SOME DEALERS

"How mnay tickets shall I send out?" is a problem every show time with the Boston dealers. Getting tickets for the show generally is not difficult, but the bought checks for collection. The dealer replied that he would sell him a car. There are, however, varying practices

on the ticket question. The J. W. Maguire Co., which handles Pierce-Arrow in Boston, believes in the efficacy of the free ticket and its attitude is backed up by the fact that a highpriced car like the Pierce has fewer competitors than has a lower-priced car like the Buick or the Chalmers. The Magnire company planned to use about 1,000 tickets, but the Buick man said his ex-

penditures would not call for more than 600, and the Whitten-Gilmore Co., Chalmers dealer, has sent them only to owners and buyers who have not received their cars. Besides these, each salesman has not to exceed 25 tickets for his personal distribution. Pierce tickets are limited to old owners and the best of the prospects.

#### SIDELIGHTS OF THE SHOW THAT CONCERN DEALERS

There are more than 6,000 Fords running in New England. White trucks have a good sale.

There are 90 exhibitors of cars, showing 260 cars and 27 chassis. The staging of the exhibition cost \$100,000.

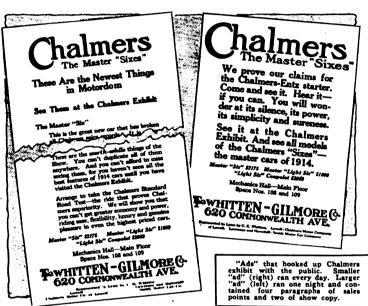
Many of New England's car buyers derive a living from stocks and when stocks fluctuate the car retailing business is affected.

There were more labor strikes in New England in 1913 than in any other one year; all of this hurt business. The 1913 business was one-third less than that of

There are ten factory branches in Boston; in some instances the branch handles wholesale business only. They are: Winton, Cole, Ford, Premier, Kissel, Case, White, Fiat, Buick and Knox.

While finances have been bad during the past year, New England dealers are looking to a good revival of trade. Business began opening up a month ago, it is improving right along, and if the snow were to go, there would be a very general improvement.

There are but three dealers who have handled the same car five years; they are F. E. Wing, Marmon: J. W. Maguire. Pierce-Arrow, and Alvin F. Fuller. Packard. The others have changed often. although several seem destined to retain their present agencies some time.



shape, and has stood up to well in the hands of an army of users, that no real excuse has been found for altering construction radically; hence the car appears practically the same as its predecessor and is driven by an exceptionally compact and efficient steam engine which is direct connected to the propeller shaft.

The S. G. V. line, which probably will remain long in the memories of those who saw the first 1913 models as the original exponent of the Vulcan electric gear shift, has changed but slightly, the principal alteration being in the size of the power plant. As heretofore, the cylinders are cast together and are of the L-head type; the cylinder dimensions. however, have been increased from 314 x 434 inches to 334 x 6, and though the nominal rating is but 36 horsepower, it is pointed out that there is no difficulty in obtaining 51 horsepower on the block. Part of the large power output undoubtedly is due to the size of the valves,

present trend is toward a cutting down of the list of persons who get free admission. Regular admission is 50 cents, but dealers are charged 25 cents each for whatever of their tickets are turned in at the gate, if they purchase 200 or more. Otherwise the rate is 50 cents.

The extent to which the ticket business may be made an abuse is illustrated by a letter received by practically every dealer in Boston. It was on the stationery of an insurance company and was signed "Automobile Department, per ---." It said:

"In the distribution of your tickets for admission to the Boston Automobile Show, we shall very much appreciate your courtesies. Sincerely thanking you for your consideration, we are -

The "per ----" gentleman may have been only a clerk, and if every recipient of the letter responded "per ---—" got "some" tickets.

One banker telephoned a dealer for tickets, his excuse being that he had

#### MOTOR WORLD

Illustrating the business of the small town dealer in high-priced cars, in Franklin, N. H., there are 15 families that can afford to buy a high-priced car. They do not want to buy from local dealers, but go to the Boston show and look over the whole field, which, in many instances, causes the little dealer to lose sales in his own town.

That SPQR which graced the banners in the Roman decorations was too deep for some of the dealers, especially those who tried to pronounce it and make it sound like something. It was the insignia upon the banners of the old Roman republic and stands for "Senatus Populus Que Romanus," which means the "Senate and the Roman People," signifying the seat of power.

On the wall of the entrance to the building was a large square index such as is used in the most up-to-date office building. It not only told the number of every dealer's space but was cross-indexed to tell that of the car as well. The Wentworth-Fosdick Co. handles the Lozier and Hupmobile and, as an example, the index said: Lozier, 132-33; Hupmobile, 115; Wentworth-Fosdick Co., 115-32-33.

The Boston Automobile Dealers' Association is a corporation which at present has 45 members; C. I. Campbell, its secretary, is engaged on a salary and members are limited to one share of \$100 stock each—that is, to each firm or individual dealer. The annual show is the association's chief work, although at other times during the year a watch is kept on motor car and business legislation and such problems as the used car business are considered.

Unfortunately, New England is badly distracted with the trading policy in making car sales. Nearly a dozen dealers acknowledged that over 75 per cent. of their sales are made on trades, and where there are branch houses the valuation on old cars is often so high as to make it nearly impossible for the dealer to compete with them and show a symptom of a profit. As a result of this there are too many changes among Boston and New England dealers. Each year brings its tidal wave of new agencies, an agent tiring of one account and changing to another, his performance being but a jump from the frying pan into the fire, as a few dealers put it. In a word, motor car merchandising in New England is not on as high a standard as it should be.

# COLUMBIA ELECTRIC CARS IN POPULAR PRICE CLASS

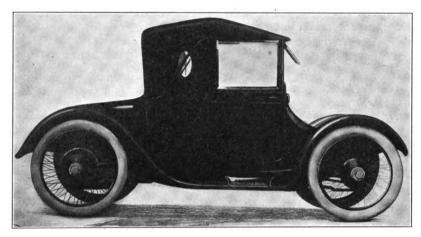
Two Models, One Open and One Closed, at \$785 and \$985, Respectively— Worm Drive and Cantilever Springs Features.

The Columbia Electric Vehicle Co., Dime Bank Building, Detroit, Mich., which has as its moving spirit C. F. Krueger and, despite the similarity of names, is not in any way linked to the former Columbia Motor Car Co., Hartford, Conn., has placed on the market two electric pleasure cars that are distinctly in the low-priced class.

The two cars, one of which is shown

is 96 inches and the wheels are of wire. There is little difference in the battery equipment, the runabout having 26 cells and the coupelette 28, both of 11 plates per cell; the runabout has a maximum speed of 20 miles an hour and the two extra cells help the coupelette to move a mile an hour faster. Worm drive is employed, with straight line shaft to the rear axle.

The bodies are of steel throughout; that of the coupelette is of the convertible type, so that in fine weather the top and windows can be dropped, making the car to all intents and purposes an open one. Windshields are of the built-in type and the lamps are partly sunk in the curved front of the body structure. The open machine is fitted with a folding top with side curtains and the usual top en-



COLUMBIA ELECTRIC "COUPELETTE" WHICH SELLS FOR \$985

in the accompanying illustration, are alike as to chassis but differ in body, tires and battery equipment; there is a strong resemblance between the bodies, however, the same general ideas being embodies in both designs. The price of the runabout is \$785 and the price of the "coupelette" \$985. Both are two-passenger cars with ample and comfortable seats.

The most conspicuous outward features of the two cars are the liberal use of curves and the generous sweep of the mudguards, which are unusually ample and have been given unusual lines, as the accompanying illustration shows clearly. The bodies are flush-topped and flush-sided, and while the rear sections smack somewhat of gasolene car practice, the fronts are distinctly electric in design, and, furthermore, decidedly sightly.

A cantilever spring suspension is employed, together with tires that are of good size—31  $\times$  4 on the runabout and 32  $\times$  4 on the coupelette; the wheelbase

velope, as well as the customary equipment of lamps, jack, tools and tire repair outfit.

#### Making a Simple Current Test.

Perhaps the easiest way to distinguish alternating from direct current is to hold an ordinary horseshoe or bar magnet close to a lighted incandescent lamp. The filament will vibrate if the current is alternating, but will remain still if the current is direct, except, however, that it will be repelled or attracted by the magnet, according to the end that is nearest to the filament.

#### Fitting Foreign Piston Rings.

The difference between American and British ideas as to the fitting of parts is well illustrated by the statement of an English manufacturer to the effect that when new piston rings are supplied they are always left too large so they can be hand fitted. In this country a piston ring is expected to fit into its groove without any tinkering—and woe betide it if it doesn't.



#### "FIXING UP" FOR PROFIT

Lesson That Can be Learned from the Methods of the Dealer in Stoves—

Value of "Brightening"

#### Used Cars.

An article that looks new and fresh sells twice as quickly as one that looks dingy, even though the actual difference in attractiveness is represented by only ten or fifteen minutes labor.

In the stove business they have a saying that "a stove well blacked is half sold," and every dealer knows the truth of the saying. Many dealers have their stoves blacked at the factories and pay extra for this service in order to have them arrive in the best condition. And if a man is a live dealer at all he will see that the nickel on the stove is bright and shiny.

A practical illustration will serve to show the point. A dealer had a second-hand base-burner that had been taken out of a home where it had been in use for a couple of years. He was offered \$12 for it by a prospective purchaser. He had allowed the customer who returned it \$12.50. He sniffed at the offer, blacked up the stove, re-nickeled the foot rail and the top-ring at a cost of \$1.65, and sold the stove for \$22.50.

#### Applying a Stove Man's Lesson.

The same thing applies to automobiles and doubtless just as much material illustrating the value of "fixing up" things might be garnered from the experiences of automobile dealers.

Now is the time to "fix up" those used cars. If a fender is bent put on a new one. Varnish the car if the paint is good—or polish it with some first-class body polish. See that the tires are inflated; clean the engine; tighten up the loose parts and get the car in shape long be-

fore you expect to sell it. An investigation shows that one of the biggest drawbacks in selling used cars is to let them stand just as they were the day they were taken in trade.

Where it costs \$25 to put a car in shape it should add \$50 to the value of the machine. This is not theory; it is the experience of live dealers everywhere. And in the judgment of many, the used car situation will cease to have much of its terrors when the dealers who take them in spend a little time, thought and money in putting the cars in a salable condition and in keeping them that way.

## BULLETINING "ATTRACTIONS" WITHIN THE SALESROOM

A Western dealer has a large bulletin board framed in oak that rests on an easel and is a prominent feature in his sales work.

The reading matter is changed every two weeks. One week it has a message in regard to the new models. Another week it bears some pertinent remark in reference to the special line of cars being featured.

"We list our attractions on that board," said the proprietor. And he meant exactly what he said. He believes that his goods, his cars, are his attractions. And because he believes it, his salesmen believe it, and the people who deal with him believe it.

This same dealer is a great believer in the printed word. Along the walls at the back are four neat frames. Whenever he runs across anything in the factory literature that seems particularly pertinent and forceful, as, for example, points in reference to service, cut prices, etc., he has a sign writer neatly letter it on pasteboard of a size suitable for the frames. Of course, there is a different message in each frame

"Where did you get the idea?" was asked him. "It's as old as the hills," he replied. "Don't you remember going down with your father for a suit of clothes when you were a kid, and seeing signs all around the store like 'If our clothes please you tell your friends; if they don't please you, tell us?' It's the same stunt. I used to read those signs and I have never forgotten them. That's where I got the idea. I change them oftener than the clothing man used to change them, however; that's the only difference."

## READING BOOKS FOR IDEAS, NOT FOR MERE AMUSEMENT

"Where does Blank get so many ideas?" asked one salesman of another. "His mind seems to be so fertile; no matter what you argue with him he can always argue round in a circle and prove his proposition."

"It's because he reads—and reads analytically," replied the second salesman. "You ought to see the way he marks up books. He is continually on the look-out for business ideas in every book he reads. It would amuse you to see how he twists some of the points around to meet the occasion. He not only marks his books but indexes the points on the flyleaf at the back so he can refer easily to what he wants. I traveled with him for two months and it was a liberal education for me.

"I have looked at books differently since then. I used to read them to pass the time. Now I read them for ideas. And I get them," continued the second salesman. "Further, I never take a trip without taking a good book in my grip. It would surprise you to know how much I have read during the past year by resolutely sticking to my plan of not letting a day pass without reading for at least fifteen minutes."



#### "ATMOSPHERE" IN WINDOWS

How Successful Merchants Avoid Inducing Indifference to Window Displays—Value of Changing Fixtures Frequently.

Why do firms like Marshall Field & Co. spend each month thousands of dollars in providing specially attractive settings for the goods displayed in their windows when the mahogany trim, plate glass and handsome lighting fixtures already give their windows distinction and beauty? Why do they not leave the windows exactly as they are built and display the goods precisely as thousands of other merchants display them without calling in the aid of outside decorative forces?

Why? The answer is clear. The special backgrounds create an atmosphere that adds interest and value to the goods store. The price of the goods may not be one cent higher than the same merchandise could be purchased elsewhere; or it may be several cents or dollars higher, as the case may be, but the Marshall Field setting makes the Marshall Field goods seem wonderfully more desirable. The setting adds class, brings out beauty and emphasizes quality. There is a definite and direct appeal to all the senses through the eye, that is clearly understood by the best merchants in all lines. That is one reason behind the lavish expenditures for window displays.

There is another reason. If they were in the habit of using the same backgrounds at all times the public would grow calloused and indifferent to their windows. Perhaps people would not pay much attention to them. But, by constant changing of window displays their interest is not only aroused but maintained. People in Chicago often will walk

several blocks out of their way to see what Marshall Field & Co. are displaying in their windows. They are sure to see something worth while. And they know it.

The high-class restaurant keeper also understands and appreciates the value of atmosphere. This is why he spends thousands of dollars in fixtures. His business is to sell food. His stained glass windows, electrically lighted fountains, beautiful statuary and oil paintings have nothing to do with the sale of food directly. But they create an "atmosphere"—that indefinable, yet very definite something that draws you to a place and makes you feel glad when you get there.

Many automobile dealers appreciate the value of atmosphere, but to obtain it few go beyond the original investment in handsome permanent fixtures. The public grows accustomed and indifferent to these settings, whereas it is keenly alive and wonderfully susceptible to new and artistic influences.

This is a new, a powerful element in the merchandising of automobiles that has come with the recognition of the fact that the automobile merchant is on precisely the same plane as the merchant in other lines doing a similar volume of business with high-class people.

# & Where Horse Knowledge Tells.

"Have you any comparative figures on truck costs?" asked a man of a truck salesman.

"None at all," replied the salesman, "but I have owned over 250 horses, and I know horses and horse costs and horse troubles and horse services. I don't think you can fool me much on the horse question.

"When it comes to automobiles, I have had some 7 years' experience as a user. I know what a car can do. I

know what I can promise these cars of mine will do, and I will not sell a 1,500-pound job when I know a person ought to have a ton or 2-ton truck.

"On the other hand, I won't sell him a ton truck when he ought to have a 1,500-pound job. I can size up a horse situation far better than the average truck salesman because of my experience. I find, on the whole, that the truck buyer likes to deal with a man who knows his problems and can write the correct prescription."

#### "Lightening Up" Window Displays.

The Detroit branch of the Winton Motor Car Co. has a window display that attracts attention, though it includes nothing but cars. There are seven or eight Wintons "head-on" facing the street—and at night the headlights of every one of the cars are turned on. The effect, to say the least, is dazzling.

An Indianapolis dealer, who sells highgrade cars, has a sign in his window which invites people to come in, and in one paragraph he promises not to ask their names or their address. The idea is to assure people that they will not be "hounded." A New York dealer is following the same plan.

#### Applying Polish With Air Pressure.

The Automobile Laundry, in Detroit, where they make an exclusive business of "laundering" cars, has discovered that it adds a great deal to the satisfaction of the customer to have his car polished after the wash. They do this polishing in a very efficient and economical fashion. Instead of spreading the polish on with a soiled rag, they spray it on with compressed air and then wipe it off, finally polishing with a clean cloth. This does much to eliminate any chance of streakiness.

## Dealer's Legal Status

Some Recent Decisions in the Courts of the Land That Are of Direct Interest to the Dealer.

(Continued from last week.)

By Geo. F. Kaiser.

If a garage keeper rents cars, he must take care that they are in a proper condition and in charge of a competent person, for in a case where the owner of a garage lets a car for hire and furnishes a driver and the hirer exercises no control, except to direct him where to go, the garageman is responsible for any negligence of the driver.

Meyers vs. Tri-State Auto Co., 140 B. W. 184.

He is not only liable for injuries caused to third persons that the driver may run down, but he is also liable to the one hiring the car for injuries caused by the chauffeur's negligence or unskillful driving.

Neumiller vs. Avme Motor Car Co., 49 Pa. Sup. Court, 183. England vs. Same, 49 Pa. Sup. Court, 187.

#### When Dealers Are Liable.

In fact, in a recent case a company which rented cars was held liable for injuries to a guest of the one who hired the car. It seems the chauffeur tried to crowd between a standing truck and the curb, which brought about a collision in which the guest was more or less severely injured.

The court said: "A corporation exaged in the business of renting out automobiles driven by its regularly-employed drivers, having an understanding with the regular customer to carry also such persons as he invites to ride with him, is liable to the one so riding by his invitation for damages sustained through the negligence of the driver in operating the automobile, unless it appears that the customer has exercised such control over the operation of the car as to make a negligent act of the driver his own act." Clinton vs. Company, 87 Atl. 71.

#### Improper Use of Car.

In another case, the foreman of a garage took a car out at night, inviting several friends to go with him. After imbibing considerably, he wrecked the car. The owner sued and the court held that, as the garage keeper knew that his foreman was in the habit of taking out cars

which were left at his shop for repairs, at improper times and making unauthorized use of them, he was liable for the damage done.

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Travellers' Indemnity Co. vs. Fawkes, 139 N. W. 703.

The garage keeper is not always liable, however, when he rents a car. In one recent case, a man hired a car without a chauffeur and procured a man to operate the same from another rival garage. An accident resulted, and it was held that the owner of the car was not liable for the injuries, as the chauffeur was not his employe but was the employe of the man who hired the car for the occasion.

#### When Dealer is Exempt.

The general rule as to when a garage owner is liable for his chauffeur's negligence is the same as in the case of any other motor car owner. The question is, as the courts have put it, Was the person operating the automobile at the time of the accident engaged in the service of or acting as the agent of the car owner? Did the car owner exercise any control over the operator? When he exercises control—when the automobile is being operated in his service, or on his business, then he is liable. Otherwise, he is not liable.

Power vs. Arnold Engineering Co., 126 N. Y. S. 839. Clark vs. Buckmobile Co., 90 N. Y. S. 771.

#### Pleasure and Work Differ.

Among the many peculiar decisions which have been handed down involving the rights and liabilities of motor car owners, is one in which a man rented an automobile for a Sunday pleasure ride. The garage keeper rendered his bill, but payment of the same was refused. He thereupon sued, but the court refused to allow him to recover because there was a provision in the State Penal Code that a person should not pursue one's ordinary calling on Sunday, as the regular business of the man who rented the car was renting cars for hire. The court said that renting a car for a pleas-

ure ride was neither a work of charity nor necessity, and for that reason the garage keeper could not recover.

Jones vs. Bell Isle, 79 S. E. 357.

#### Peculiarity of Sunday Laws.

To date, this decision stands alone and has not been followed by the courts of any other State. Many of the States, however, have statutes quite similar to the Georgia statute under which this case was decided, and sooner or later this question is bound to come up in some of those States. When it does, it will be interesting to note what method the courts will adopt to get around this law. If they do not find some way, the result will surely be to put taxicabs out of business as far as Sunday is concerned and to drive people to using surface cars and the subway.

#### Insurance Company Not Liable.

An insurance company need not defend a motorist who holds its accident policy and who is arrested and prosecuted for manslaughter because of death caused by negligent driving of his automobile.

The Supreme Court of Michigan decided that the word "suit" in an automobile accident policy does not include a criminal proceeding; that an insurance company need only defend actions for money damages for injuries when its policy contains the provision that it should defend "suits" brought against the insured on account of automobile accidents and held that the Circuit Court properly gave judgment for the insurance company when the motorist sued it because it refused to defend him in criminal proceedings.

#### Watch Wording of Policies.

In this case a man was killed in a collision with one of the automobiles covered by the accident policy and the car owner was told by the insurance company's representative that the company would defend him in any civil action for damages which might result. He was thereafter arrested and prosecuted for manslaughter. He then requested the insurance company to defend him in the criminal proceeding. It refused to do so and he engaged his own lawyer and. after spending \$2,258.46 he was found not guilty. He thereupon sued the insurance company for that amount, but the court held that he could not recover that sum from the insurance company. as under the wording of the policy the company did not have to defend a crim-

Patterson vs. Standard Accident Insurance Co., 144 N. W., 941.

### FEAR OF LOSING PROSPECT HINDERS SALES

# "If You Can't Do a Legitimate Business With Him, Let Him Go," Advises Reilly—Working Too Long on One Man Takes Time From Prospects Who Are More Likely to Buy.

"Well, we're particular, aren't we,

"That sounds just like an automobile

Charley?" said Reilly. "We don't care

to have some people on our list."

"Oh, you did!"

"Yes, ma'am: I did!"

"How's friend Berdette?"

Reilly interrupted his conversation with the Sales Manager as Charley, Reilly's salesman, walked in from the shop, where he had left the demonstrating car to be brightened up in anticipation of a

dealer—passing up a sale if he got a chance to make it," jested the Sales Manager.

"I didn't say we passed up sales," retorted the dealer.

"MAYBE THEY HAVE THE RIGHT PLAN AND MAYBE NOT," SAID REILLY

try at a prospect the next morning. When the dealer shot the question at the salesman Charley answered:

"Oh, I guess he's got away from me; I hope so, anyway."

"Is that the kind of gang you are?" asked the Sales Manager. He could look unusually disgusted and contemptuous when he wanted to. Just now he seemed to want to; anyway, he looked disgusted.

#### Reilly Proceeds to Explain.

"I trust you will explain that," replied Reilly. He could look unusually indignant and frigid when he wanted to. Just now he seemed to want to; anyway, he looked indignant. The salesman merely looked on; he had witnessed such exhibitions before and hardly expected that blows would be struck.

"What I mean is, do you let prospects slip away from you? I thought you two gentlemen never allowed a prospective buyer to escape once you got a nibble." "You-"

"No, he didn't!" chimed in Charley.
"Well---" And now the Sales Manager was cut short by Reilly.

"Maybe we do pass up sales," asserted Reilly, "but we also make a few, and if we choose to pass up a prospect maybe that is a part of our working system. How do you know?"

"I don't."

"That's what I thought!"

"However," insisted the factory man, "I have heard it said—and I have no reason to doubt it—that a prospect should never be given up so long as there is a spark of vitality in him as a prospect."

#### Results Are Scoring Points.

"Oh, I know all about that!" exclaimed Reilly, with a loose-joined wave of his arm, at the same time turning with one leg thrown over the arm of his chair. "You've been listening to some of these stick-to-it-till-you-die boys," he continued. "Maybe they have the right plan and maybe they haven't; no two

men's theories or practice agree, anyway, so what can you do? The most convincing criterion is results! sales! profits!"—Reilly gesticulated properly at every exclamation point—"and I guess we're managing to get our 'ham and' in about as plenteous quantities as most of the rest of the 'row.'"

"But don't you keep after them?" inquired the Sales Manager.

#### How Far to Chase a Prospect.

"Certainly we do—to a certain extent—but there's a limit to everything, and in this case the limit is never the same twice. You often hear it argued by sales managers"—Reilly gazed ceilingward as he slowly pronounced the words—"that a dealer or salesman should hang to a prospect as a bulldog does to another dog's throat, but there are two sides to the question.

"That line of talk is very often the theme of this ginger stuff that is handed out gratuitously by men who want to make other men help them increase their profits. It's a good line of argument, at that. But-we are running this business for our own profit; it is up to us to make the most of it that we can; we are the men who have to meet the problems that you factory men talk about, and it's up to us to do it in the way we think best. If you were dropped overboard would you do your darndest to swim out or would you stop and accept the advice of a man sitting on the deck?

#### The Sad Case of Berdette.

"You don't need to answer; none is required. It's the same way in making sales and boosting our business. We don't believe in sticking to a prospect everlastingly, because we consider it wasted effort in a great many cases. Take this man Berdette—— You tell him, Charley."

"Sure! Let's have it," invited the Sales Manager.

Charley began: "Well, Berdette wrote in for a catalog one day about two months ago and we sent it. I had a talk with him and he said he was thinking of buying a car; I asked him if he



wouldn't like to take a ride. He said he was very busy that afternoon, but he arranged to take a demonstration later on. He rode in the car, seemed to like it very much and didn't find any flaws in it. I called on him again in an effort to help him get on the owners' list, but he wouldn't hurry.

"Today I looked him up again and he seemed as apathetic as on the last previous occasion. I tried to get him to give me some reason as to his failure to buy; I asked him if the car hadn't proven itself satisfactory to him, if he didn't like it, if he didn't wish to own a car and so forth, but I couldn't get anything out of him. He has set himself back in the breeching and he just won't go at all. From the way I size him up it's going to take too much time to make the sale to realize any profit on it."

#### Sales Manager Capitulates.

"That's it exactly," joined in Reilly. "Charley could keep after this man for six months, a year or two years, and maybe he'd sell him, but by the time the sale was made we would have worn out so many tires and wasted so much time that the profit would have dwindled. Also while we are monkeying with him we could see a half a dozen live prospects and make anywhere from one to . a half dozen sales. All I want to ask you is whether you would rather see that man's name on a contract or the names of several men, all secured in the same time."

"I don't think there is much need of my answering now, either," smiled the Sales Manager.

"Some dealers and salesmen have an absolute horror of losing a prospect." continued Reilly. "It must be a relic of the stone age of automobile selling; I can't account for it otherwise. If you go into a store for a suit of clothes and offer the man \$5 less than his price, what does he do? If he is a reputable merchant he will let you go out the door without even so much as watching you go.

#### One Dealer Who Won't Trade.

"If you went into a restaurant and tried to beat the proprietor down on the price of a steak, what would he do? He'd laugh at you! But-if a prospect walks into a salesroom and tries to get a cut price by trading, the dealer often thinks he is obliged to listen and argue and stand on the defensive; and sometimes he gives the cut price. The Aristocrat dealer, down the street, is one of the most emphatic men I ever heard talk on that question.

"He tells his salesmen that they are to do no trading at all; they have a separate used car company that buys in the cars of those owners who want to get rid of them, and the instructions are to tell the prospect that the company does no trading whatsoever. But now and then a salesman gets nervous because a prospect declares that if he can't trade he won't buy and the salesman asks the boss what he shall do. He gets but one answer, 'If he won't buy unless we'll trade, let him go! We won't sell unless he'll buy without trading!' That reassures the salesman. The dealer says he would just as soon lose a prospect as not if he is insistent on a trade."

#### Salesman's Point-Blank Method.

"Maybe he's got some sense, too," commented Charley.

"He's still paying his rent," replied Reilly. "And then there's Bud Long, who sells for the Price dealer. Bud's on commission, too, so he must believe he's very nearly right; if his tactics lose he is the man who suffers. And Bud absolutely won't bother with a man who wants to be chased a couple of years by an automobile salesman. Sometimes Bud seems pretty aggressive and perhaps almost gruff, but he gets the business.

"If he has demonstrated the car and the prospect hasn't found any fault with it and if there seems to be no reason why the man shouldn't buy, Bud comes right out point-blank and asks him. He says, 'We've shown you what the car can do, Mr. Smith; you seem to be perfectly satisfied with it; the price is right and our service is excellent, as any of our owners can tell you; we are willing to give you every attention, but you do not seem ready to take a car. Is there anything about it you don't like? Is there anything further we can do for you in explaining our proposition?' In other words, Bud asks the man why in hell he doesn't come across with an order or stop wasting the salesman's time.

#### When To Drop a Prospect.

"The way he goes at it sometimes is a bit too blunt for me, but it is only an exaggerated instance of the tendency in more than one salesroom. A dealer has so much time and has got to get full value out of it, which he can't do by visiting with a man who doesn't look as though he was going to buy. We try to preserve a happy medium and not drop them too quickly, but we won't keep them on the live list forever. We sort of keep an eye on them and some of them we go back after, but the live prospects are the men to spend your time on---"

#### Parting Shot That Hit Reilly.

"You called on your wife for eight or ten years before you persuaded her to write her name 'Mrs. Reilly.'" It hit hard and the Sales Manager smiled gleefully.

"Must be a poor closer," remarked Charley.

"I never could see, anyway, how he ever sold such a lemon," said the Sales Manager. "I think he's a good closer." Which closed the argument.

#### Gasolene Exports Total 117,000,000 Gals.

Gasolene in the amount of 117.728.286 gallons and valued at \$17,418,777 was exported from the United States during 1913; the average price a gallon was 14.82 cents. Just how this compares with the exports during 1912 cannot be ascertained, for the 1912 exports were not tabulated in the monthly summary of commerce and labor. Canada bought most of the fuel, taking in all 37,509,535 gallons and paying 13.39 cents a gallon, or a total of \$5,019,305. The gasolene sold to British Oceania brought the highest average price a gallon, 20.75 cents, and that exported to Belgium the lowest, 11.5 cents.

The exports for the month of December totaled 9,174,994 gallons as against 2,587,633 shipped out in the same month of 1912; an increase of 5,587,361 gallons. or 216.5 per cent. In value the figures for the same month of the respective years are \$1,450,244 and \$378,677, showing an increase of \$1,071,567, or 284 per cent. The average price for the gallon also increased; it stood at 14.6 cents for December of 1912, while in the same month of last year it was 15.8 cents. The gallons, total value and average prices are: Belgium, 2,457,790, \$276,200, 11 cents; Netherlands, 6,694,189. \$905,616. 13.5 cents; Other Europe, 35,392,011, \$4. 618,833, 13.05 cents; Canada, 37,509,535. \$5,019,305, 13.39 cents; Argentina. 10.-815,565, \$1,879,715, 17.32 cents; Brazil. 11,227,999, \$2,024,938, 18.22 cents; British Oceania, 4,650,154, \$966,316, 20.75 cents; Other countries, 8,981,043. \$1.727,854. 19.2 cents. Totals, 117,728,286, \$17,418. 777, 14.82 cents.

#### Kissel's Chicago Cashier Disappears.

Search is being made for Wilbur W. Sanford, until recently cashier of the Kissel branch in Chicago, at East 26th street and Wabash avenue; the books of the company are said to be \$800 short. The Kissel branch was taken over about a month ago by the McDuffee company

# Advanced Maintenance

S O L D E R I N G — P A R T T W O

(Continued from Last Week.)

By George Fernwell

When the iron has been heated until it is hot enough to burn or discolor the coating of tin on the point it should be held as near as is found bearable to the cheek, and an effort made to memorize a mental impression of the physical sensation caused by the proximity of a soldering iron which is just on the point of being overheated.

If this is done, it should, with very few repetitions, become evident without dipping it in the solution, just when the soldering iron is heated as hot as it can be without the risk of the tinning being burnt off, or of cooling the point by dipping, before it is sufficiently heated.

#### Fluxes and Tinning Solutions.

For occasional small jobs, the soldering iron may be dipped in the same solution as may be used for a flux on the work to be soldered. If continued, it will make the solution dirty and unfit for applying to the joint.

For continuous soldering for any period longer than necessary for a few minutes' job, a soldering iron, when sufficiently heated, should be dipped in a solution of about 2 ounces of powdered sal-ammoniac in one-quarter pint of water. The soldering iron is dipped in this solution when retinning after overheating and also when the iron is brought to the proper heat for use it is dipped quickly in and out of the solution before using.

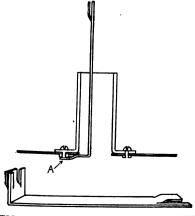


FIG. 1-REINFORCING SOLDERED JOINT

#### Our Second Week

As an Advanced Maintenance department we make our second bow. Last week we published in these columns the first article of a series on Soldering. This week the second one appears. Next week there will be the third installment.

These two pages each week are written expressly for dealers, repairmen and garagemen. The information is not based on hearsay or rumors, but on experience, supplemented with a careful knowledge of materials and how they should be handled. The repairs outlined are practical repairs, not imaginary ones.

Dealers, who want more information on soldering, are invited to write to our Advanced Maintenance department and your questions will be published in these columns over your signature and answers also published free of charge. Write your questions distinctly, using one side of the stationery only.

Dealers, who have done some particularly successful soldering jobs, or have had some important experiences, are invited to write these to the editor of this department for publication.

These columns are for dealers, repairmen and garagemen and we invite you all to make use of them.

THE EDITOR.

As a flux to be used in joining two metal surfaces by soldering, there are various ready-made preparations of more or less merit, but nothing has been found as fully effective as chloride of zinc. This is made by cutting pieces of new scrap zinc so that they will lay flat at the bottom of an earthenware crock or other receptacle not affected by acids. Upon the zinc is then poured the desired quantity, or at least one-quarter of a pint, of muriatic acid. A violent ebulition will

immediately take place, followed by the giving off of acid vapor. This vapor is intensely destructive to the surface of bright steel, so that the process of making chloride of zinc should be carried out, if possible, out of doors, or in a place where there is no machinery or other steel to be corroded. When all sign of boiling or bubbling has disappeared from the muriatic acid, it has then become chloride of zinc and is ready for use.

It is the most effective flux for aiding a perfect union between the solder and adjacent metal surfaces, especially in work which cannot be reached to properly clean it with a scraper.

A gasolene torch, if one has plenty of time and patience, will heat a small soldering iron sufficiently for small work such as soldering unions on gasolene pipes; but the gasolene torch will result in a considerable waste of time should the work in hand be of such a nature as to consume a number of hours of continued soldering such as repairs to a radiator or a gasolene tank.

#### How to Use the Gas Stove.

The various types of gas stoves, such as are designed for heating soldering irons, when used with an adequate pressure of gas or in conjunction with an air blast from a blower, will effectively make one soldering iron hot enough to use as fast as its mate becomes too cold to use, thus permitting continuous soldering. A gas flame has the disadvan-

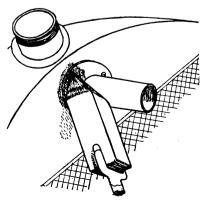


FIG. 2-CORRECT POSITION FOR IRON

tage, however, of quickly eating holes in the copper head of the soldering iron and ruining it.

Where conditions will permit, the most effective, the cleanest, the most economical use of the soldering iron is obtained with a charcoal stove. The soldering irons will last longer, require less frequent retinning, and will not be eaten in holes by the charcoal as they would be by the flame of a gas stove. If charcoal is used and care exercised not to allow the irons to become overheated, it should be possible to use soldering irons for hours without refiling and retinning. Comparing this with the use of a gas stove, with the latter the soldering irons will have to be refiled and retinned at least every half hour. In addition to the loss of time this involves, the copper heads are rapidly filed away, and also corroded away quickly by the gas flame.

#### Using the Soldering Iron.

Usually in repairs of parts of automobiles which require soldering, the first operation is, in the instance of a gasolene tank, to remove the paint from the part to be repaired, or, in the case of a copper gasolene tank or the unpolished part of a radiator, it is necessary to remove the tarnish or oxidized surface of the metal. For either purpose, the three-cornered scraper, described elsewhere, is usually the most effective to employ, as it rapidly removes either paint or an oxidized surface. Accordingly, the surface to be tinned should be scraped scrupulously clean. streaks of the surface are left unscraped these can not be tinned without the excessive use of strong flux. When time will permit, it is preferable to scrape an area conforming in outline to the plate or flange which may be required to be attached. Not more than half an inch of scraped surface need extend radially beyond the plate or flange.

#### Tinning the Surface.

In general, the next operation is to coat the scraped surface with solder—in other words, to tin it. To the cleaned surface of the metal a coat of soldering fluid or chloride of zinc is applied with a brush covering the entire surface which is to be tinned. The soldering iron is brought to the proper heat and cleaned by quickly dipping in and out of the sal-ammoniac solution, or soldering fluid, the soldering-iron being held in the right hand and a bar of solder in the left hand; a small quantity of solder is then melted with the soldering-iron on the surface which is to be tinned. One of

the tinned faces of the soldering-iron is next brought in contact with the metal surface and the small portion of solder, causing the latter to flow like a liquid and spread over and adhere to the cleaned and fluxed metal surface.

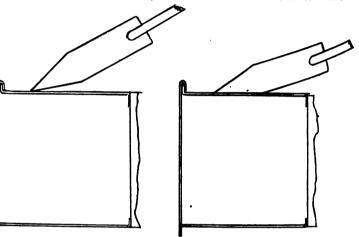
#### How to Hold the Iron.

It is necessary to observe closely that one of the surfaces of the pyramidial point of the soldering iron is in full contact with the surface to be tinned. If the soldering iron is held at such an angle that only the extreme point touches the metal surface, Fig. 3, it will be found nearly impossible to impart enough heat to the surface to keep the solder in a flowing condition. But by holding it as instructed—that is, with

deposited upon the metal surface in a layer of uneven or irregular thickness. It is next required to remove all this solder except enough smoothly and thinly to coat the metal surface. If a gas blow-pipe or a gasolene torch is now available, the flame of one or the other should be applied to the solder-coated surface, care being taken not to overheat. The latter may be prevented by sharply watching for the disappearance of the roughness or unnevenness of the solder deposited on the metal surface, until it is all one smooth surface of melted solder.

#### Cleaning the Tinned Surface.

Instantly the latter condition is observed, the gas flame should quickly be withdrawn from the tinned surface, and



FIGS. 3 AND 4-INCORRECT AND CORRECT METHODS OF APPLYING IRON.

the entire area of one tinned face of the soldering iron touching the surface to be tinned, Fig. 4, and with a horizontal rubbing action-sufficient heat will be imparted to the surface to be tinned to cause the solder to melt and flow almost as freely as a liquid. An essential requirement in tinning or soldering is that as much as possible of the heat latent in the soldering iron should be imparted to the metal which it is required to tin, so as to keep the metal surface hot enough to melt solder. When it is found that this can no longer be done, and the solder no longer flows at a semi-liquid consistency, but has the appearance of congealing, the soldering iron has lost too much heat-in other words, it is too cold-and if alternate irons are not being used, it is necessary to wait until the single soldering iron, just used, has been reheated.

As soon as the required area of Surface is coated with solder, the latter will necessarily be somewhat rough or uneven—that is, the solder will have been

with a piece of clean waste or other similar material the superfluous melted solder should be quickly wiped clean away from the tinned surface, leaving the latter thinly and brightly coated with solder, ready for the metal patch. hose nozzle, pipe flange.

#### Typical Soldering Repairs.

Upon cleaning and examining the flange of the nozzle at which the leak is assumed to have been located, it may be noted that the solder which had formerly joined the flange of the nozzle to the radiator has become cracked. To repair this kind of a leak in a radiator. the application of additional solder in a mass, so as to cover the crack or opening through which the water has escaped. is not likely to prove a permanent repair, because the solder, in a mass, offers comparatively little resistance to the stress or strains which caused the leak and which may be assumed to continually exist with the operation of the

The only thorough and assuredly permanent repair involves removing the nozzle from the radiator, cleaning and retinning the entire base of the nozzle. and also the annular surface to which it had been attached. The removal of the nozzle may compel the chiselling and drilling out of rivets which hold the nozzle in place, serving to reinforce the solder and which were inserted at the original construction of the radiator. Should the hose nozzle have been riveted to the radiator and the rivets have had to be drilled out in order to remove the nozzle, it will be found impractical. when replacing the nozzle after cleaning and retinning the surfaces to be soldered, again to reinforce the solder by rivets, as it will be nearly impossible to introduce suitable bars, or anvil-like surfaces, upon which the heads of the rivets might rest while the latter were headed over with a hammer and a rivet set. In such a case it will usually be found possible to use, instead of rivets, small, round-headed brass machine screws, and nuts, holding the nut in a device similar to Fig. 1 (A), inside the radiator while turning the brass screw in the nut from the outside.

#### Care Needed in Locating Nozzle.

Before detaching the hose nozzle from the radiator, the precaution should be taken of ensuring its replacement in the same exact location. If the flange should have been riveted to the radiator the rivet holes would act as guides in relocating the nozzle. If there were no rivets, the best course would be to lay out and drill from three to six 1/4-inch holes for 1/8 brass screws and nuts, through the flange of the nozzle and the plate to which it is attached. These holes would form an accurate guide when replacing the nozzle and the screws would greatly reinforce the new soldering. To be effective for relocation of the nozzle, the holes referred to must be drilled before the nozzle is detached from the radiator.

#### Replacing the Radiator Nozzle.

Assuming the rivets, if any, to have been removed from the flange, the nozzle should be heated with a torch or blowpipe until it may be detached from the radiator. The superfluous solder should be melted with a blow-pipe or torch and wiped off from both the flange of the nozzle and the annular surface from which it was detached.

The latter may be cleaned and tinned as fully described in the first part of this article. The flange of the nozzle should be cleaned and tinned on both faces and at the edge. The nozzle is then ready to replace with the aid of the small machine screws and nuts referred to, after brushing the newly tinned surfaces with flux.

A soldering iron should then be heated and maintained ready for use. With the radiator lying horizontally and also the flange of the nozzle, the latter should be heated with a blow-pipe or torch at an inch or more above the flange until the solder visibly melts. In general, it is not safe for a novice to apply the blow-pipe or torch flame to the radiator in the neighborhood of the numerous soldered seams, on account of the risk of melting the solder and causing additional leaks.

#### Soldering Nozzle in Place.

With the nozzle heated so as to melt the solder on the surface of the flange, soldering acid or flux should be freely applied with a brush, and the joint is then ready for the soldering iron which must have been kept hot enough to use. With the soldering iron cleanly tinned, apply additional solder on top of the flange.

With one of the tinned faces flat on the flange, hold the soldering iron still in one spot until the added solder is flowing freely over the flange and the surface of the radiator. Then slowly draw the soldering iron around and on the flange, adding more solder as often as needed to make the joint uniform.

#### Plenty of Heat Necessary.

The flat face of the iron must be in contact (Figs. 4 and 2) all over with the flange. Should the solder begin to flow less freely, the tinned face must be held stationary until the solder flows freely again, when the soldering iron may again be drawn around the flange at a sufficiently slow rate to keep the solder freely flowing where in contact with the soldering iron.

Having soldered completely around the flange in this manner, the joint will be of the utmost strength possible in a soldered joint.

#### Applying the Final Touches.

The solder may be rough and unsightly at the first attempt. The appearance of the joint can be made to look more workmanlike after finishing with the soldering iron, by again applying a blow-pipe or torch flame to the nozzle an inch or more above the flange. While the nozzle is being reheated, the appearance of the soldered joint which has been made must be keenly watched. If the radiator and flange are lying horizontally, the rough surface of the solder

may be observed slowly to remelt and automatically assume a uniform contour with rounding edges. Not an instant longer may the flame be applied or the whole mass of solder will run through between the soldered surfaces to the inside of the radiator. Should this happen, the joint must be resoldered with the soldering iron and additional solder.

#### Sharpening the Scrapers.

Care taken to keep the scrapers in good condition will be fully repaid by the effective work which can then be accomplished with them. They should be carefully ground and water used while grinding them to keep the cutting edges from blueing and becoming soft. This especially applies to the extreme point of the three-cornered scraper.

A mere touch of rapidly revolving emery wheel or grindstone, if water is not used, will blue the point of the scraper, rendering it soft and unable to retain the requisite keen-cutting edge at the extreme point. After grinding, the cutting edges of the scraper should be carefully honed.

A scraper, to work quickly and thoroughly, must be kept as carefully, and the fine edge produced with a hone as frequently renewed, as in the case of a carpenter's chisel.

(To be continued.)

#### Willys Wagons for New York Police.

By way of efficiencyizing its Police Department, the City of New York just has placed through the R & L Co., New York distributors for the Willys-Overland Co., Toledo, O., an order for 25 Willys-Utility 34-ton vehicles. The chassis are fitted with special screen-side bodies providing accommodations for 12 persons inside and 2 on the driver's seat. The equipment includes a stretcher for emergency use as well as a complete side curtains. The wheelbase of the vehicle is 144 inches and they are capable of a maximum rate of speed of 25 miles an hour.

#### More Foreigners Use American Starter.

Further indication of the appeal of American electric lighting and starting apparatus to foreign engineers is revealed by the fact that four more well-known European motor car manufacturers have adopted the product of the Rushmore Dynamo Works, of Plainfield, N. J., for regular equipment. These include Fiat, Bianchi. Isotta-Fraschini and DeDion-Bouton. The system has been in use on some of the Lancia models for some time.

# POPPETLESS VALVE SYSTEM THAT IS SLEEVELESS TOO

Single Valve, Cam and Pushrod for Each Cylinder—Oscillating Segments Lubricated by Forced Feed Slide Over Ports.

A valve system in which segmental valves of the overhead type open and close long, narrow ports with an oscillating motion has been brought out in Springfield, Mass., by W. E. Taft, a mechanical engineer, and Fred Belcher, a racing driver who formerly piloted Knox cars. The system has been experimentally built into a 6-cylinder Beaver motor with bore and stroke of 4½ and 5½ inches, respectively; the motor is of conventional design throughout except for the valves and their accessories.

The cylinders are extended upward, and in each extension there is a cylindrical bore extending through from side to side, across the cylinder. This bore or tunnel is of approximately the same diameter as the bore of the cylinder. Communication between the bore, which is the valve chamber, and the combustion chamber, is through two slots, one for the intake and the other for the exhaust, each 4.25 inches long and .375 inch wide. The slots run lengthwise of the valve chamber-that is, across the cylinder. The intake and exhaust pipes connect with ports that open into the top of the valve chamber.

The ends of the valve chamber are closed by two heads, and between them there is a cast iron cylindrical liner which is concentric with and of smaller diameter than the valve chamber, so that between the two there is an annular space. In this space works the segmental valve which is of sufficient width to cover both the ports leading into the combustion chamber and long enough to fill in the length of the space from head to head.

A steel shaft runs through the center of the liner and is carried in ball bearings supported by the heads. An oscillating motion is given to the shaft, through a crank at one end, by a pushrod operated by a cam, much as a poppet valve is actuated. The oscillating motion is transmitted from the shaft to the segmental valve by two studs, projecting radially from the shaft, one near each end, which work through circumferential slots in the liner and have their ends in engagement with the valve. Springs are provided to keep the valve pressed downward on its seat. The os-

cillating motion given to the shaft is, of course, communicated to the valve. Moved to the extreme limit of its movement on one side, it uncovers one of the slots, and moved to the opposite extreme it uncovers the other slot. In midposition both slots are covered, which corresponds to the closing of both intake and exhaust valves.

The cylindrical liner, in addition to forming part of the valve seating, carries a water jacket and also the lubricating system by which oil is fed to the



OSCILLATING VALVES IN PAIR-CAST CYLINDERS

valve under pressure. As the cylinder casting itself carries water jacketing around the ports leading into the combustion chamber, it will be seen that the valve works between two water jackets.

The cam used is a compound cam which actuates the valve for both the



REVERSE, SHOWING OIL AND WATER PORTS

intake and the exhaust openings, thus eliminating the necessity for two sets of cams and their parts. The valve timing is more or less conventional; the intake opens 4 degrees past dead center and closes 38 degrees past bottom center, while the exhaust opens 45 degrees before bottom center and closes 2 degrees past top center.

The fact that the valve is exposed to

the heat of the burning gases during the explosion stroke, due to its position as a closure for both ports, seems to have no ill effects, due largely, no doubt, to the cooling effect of the double water-jacketing. Belcher is authority for the statement that during a run of several hours under load the valves showed no indication of overheating.

One of the important advantages claimed for the system is that there is but one valve for each cylinder, and that it has a broad contact surface that is not liable to wear itself into a leaky condition.

Though it has been installed in a chassis, the motor has not as yet had extended road tests. After a series of thorough service trials the motor probably will be given horsepower tests at the Worcester Polytechnic Institute.

#### Portsmouth's First Show Staged

That Portsmouth which is in New Hampshire had a small automobile show last week, but it was a select one and proved so successful in the estimation of those who participated that plans for the 1915 show already are well in hand. The show was opened Thursday, 5th inst., in the Motor Mart, which was donated for the purpose by its owners, and was closed three days later. Three dealers in cars exhibited their wares under flags and bunting and electric lights. which combined to give an altogether artistic effect to the otherwise bare garage. The attendance was exceptionally large. the show drawing not only from Portsmouth but from many of the surrounding cities and towns.

Those who exhibited were: C. E. Woods, five Cadillac cars; A. E. Horton. two Studebakers; Dickey & Hoyt. proprietors of the Motor Mart, six Hudson and Overland cars. A large exhibit of tires practically hid the whole rear wall of the building.

#### Truck Club to Hear Hudson Plans.

By way of arousing the interest of its members, and of others, to the possibilities of the plans of the Bridge and Tunnel Commissions of New York and New Jersey, the Motor Truck Club. New York City, has arranged that its next monthly meeting, which is to be held March 18th, be devoted to a discussion of the commission's recommendation for twin vehicular tunnels beneath the Hudson river at Canal street and a bridge at 57th street. The commission itself will present its plans, which are to be illustrated with the aid of stereopticon views. The meeting will be held at the Automobile Club of America.

#### ACCESSORIES THAT CROPPED OUT IN BOSTON

# Mechanics' Hall Houses Many Devices Not Revealed at National Exhibits—Woollen Tires, Mechanical Gearshifter and Steam Generating System Appear—Local Character of Show Emphasized.

As usual, the Boston show includes a host of accessories, and while most of them have been illustrated and described in the pages of Motor World either in reports of other shows or individually, there are quite a number that appear for the first time.

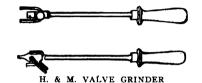
Among the new things, the Fox swinging headlights, made by the Fox Auto Searchlight Co., Providence, R. I., are unusual, chiefly because, though like many other devices of the same class they swing with the steering gear when the car is turned, only one lamp moves at a time. When rounding a turn to the right, for instance, it is the left lamp only that turns and, being nearer to the outside of the curve than the other lamp. it is better positioned to illuminate the road. The lamps are deflected by steel cables winding on a threaded sleeve turned by the steering shaft, and are returned to the normal forward position by springs. A locking device disconnects the lamps from the swinging mechanism so that for daylight driving they will not be deflected on turns.

#### Air Compressor and Motor Starter.

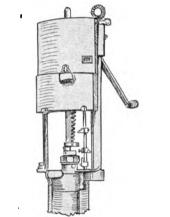
The Shimpf compressed air starter, the product of the Shimpf Starter Co., 178 Devonshire street, Boston, already has been described in detail in Motor World. Recently, however, some detail changes have been made; notably, the air compressor, which also acts as the starter motor, is built with four cylinders in V form instead of the former arrangement of four cylinders in a row. The main features and the principle of operation remain unchanged.

While the Calnan tire remover, made by James P. Calnan, West Upton, Mass., looks very much like an ordinary screw clamp, and, in fact, is recommended by its maker as an efficient substitute for that tool, its real office is the lifting of tires from their rims. The jaw pieces are tightened against the beads on opposite sides until the tire can be canted. A special tire lever with one end, for use on the tire, curved, and the other surmounted by a ball, complements the removing tool; the lever end is designed to handle a tire without injury and the

ball end may be used as a hammer. Of course, the tools are useful for the application, as well as the removal, of tires. The accompanying illustration shows clearly the construction of the device.

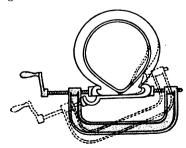


Something a good deal better than a screwdriver for grinding in valves is shown by the L. D. Robbins Co., 15



PUMPLOK SLOT ATTACHMENT

Broad street, Lynn, Mass., in its H. & M. valve grinder, which, as an accompanying illustration shows, can be used to



CALNAN TIRE REMOVER

grind valves with two holes, one on each side of the center, as well as the kind with a screwdriver slot. The fork for turning valves of the two-hole kind swings in a bearing in the tool and is held in position, either out or in, by a clamping screw with a knurled head. The handle has a collar or flange so that pressure can be applied without causing the hands to slip.

The unusual expedient of heating both air and gasolene to ensure the best possible vaporization has been adopted in the case of the Parker carburetter, made by the Parker Carburetter Co., Exposition Building, Charles River Road, Cambridge, Mass. The gasolene is heated until its temperature is within 15 degrees of boiling point and is mixed with air which, coming through the fixed air intake, is heated by passing around the hot exhaust manifold, the usual horn and pipe being employed. The auxiliary air intake opens automatically at a speed of about 20 miles an hour and takes in cold air which, however, is warmed and mixed with the hot air before passing into the mixing chamber. The mixture is passed through a screen which breaks up solid particles and also prevents back-

#### Pump Lock That is Attachable.

Any standard gasolene pump can be turned into a coin-in-the-slot pump by attaching the Pumplok, manufactured by Chas. H. Simerson & Co., West Hoboken, N. J., and distributed in the East by the S. & A. Mfg. Co., 755 Boylston street, Boston. The picture shows the general appearance of the device. Where the pumplok is to be operated by employes numbered metal slugs are supplied that permit the turning of the handle, and where it is to be used as a vending machine it can be unlocked by the insertion of a 25-cent piece. An automatic counter registers the quantity pumped to the tenth of a gallon. Unless a coin or a slug is dropped into the slot the machine cannot be operated, so that gasolene or oil cannot be taken without leaving either money to pay for it or a check that will identify the taker. Various gears are fitted to adapt the attachment to the various pumps on the market. The measurements are 7 x 91/4 x 11/2 inches.

A car lock that controls not only the ignition circuit but also the emergency

brake is shown by the Lawrence Specialty Co., Boston. The Lawrence lock is controlled from the dashboard; a small, round plate, set flush, contains a Yale lock and on either side of it there is a push button. One of the buttons, when depressed, short-circuits the ignition, and the circuit can be re-established only by using the proper key. The other button locks the emergency brake, after it has been set; the pressing of the button locks it in the set position and its release necessitates the use of the kev. If both ignition and brake are locked the key is inserted and turned first one way and then the other to release them.

The brake locking device consists of a rack and pawl mechanism installed at the foot of the brake arm that depends from the shaft; the accompanying picture shows the general arrangement. When the lever is set the pressing of the



LAWRENCE MAGNETIC LOCK

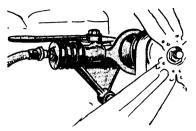
button causes a pawl to drop into engagement with the rack, and it can be released only when an electro-magnet, energized through the dash switch, disengages it. Either ignition or brake can be locked separately; a single lock is made for the brake alone.

#### Saves Gasolene by Hot Air.

Hot-air injection into the intake pipe just above the throttle is the idea carried out in the Peerless automatic gasolene saver manufactured by the Peerless Motor Specialty Co., Inc., 1779 Broadway. As the illustration shows, there is an adjustable automatic valve that screws into the intake, and air taken through a hot-air horn is piped to it. The heat is applied to the gasolene just when it is most susceptible to the application of heat. The makers state that besides saving gasolene, the device greatly reduces carbonization.

The Windsor Mfg. Co., Providence, R. I., markets a tool for removing valves which is a simple double-lever device

with a chain connecting between the levers. The top lever carries at its inner end a plug that screws into the spark plug opening and which, when screwed home, rests on the valve head and holds it on the seating. The lower lever has a yoke at its inner end to straddle the valve stem and rest against the washer on which the valve spring rests. As the

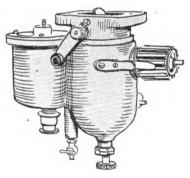


COLSTAD FORD PUMP

length of the vertical chain connecting the levers can be varied, the tool can be adapted to various sizes of motors.

The Gurnard Mfg. Co., Beverly, Mass., shows a simple tire hose coupling for making quick connection with the valve stem. The coupling is short and thimble-shaped with a rubber lining. On top there is a short lever with a cam end. When the lever is pressed the cam presses on the top of the rubber lining so that the open end of the thimble is pressed over the valve stem and closes in against the sides of the stem forming what is claimed to be an air-tight joint.

In the Kennedy carburetter, manufactured by L. D. Robbins, Lynn, Mass., all of the air enters by one opening guarded by a flap which is weighted at its bottom so as to hang vertically and



PARKER HEATED CARBURETTER

has a series of holes in its top part. The valve is designed to give a progressive air opening: at first all the air will enter through holes in the top of the valve, but as motor suction increases the valve will swing inwards at the bottom and outwards at the top, until it rests in a horizontal or wide-open position, both the weighted bottom part and the holes

in the top part being factors in regulating this opening.

The carburetter has two nozzles, one fixed and one movable; the latter is interconnected with a special air valve in the main air passage to the throttle. There is also a gasolene bypass which, when the throttle is closed, allows gasolene to pass direct from the puddle around the main nozzle to the manifold above the throttle.

#### Kennedy Carburetter's Compound Valve.

The valve in the mixing chamber is compound, or a valve within a valve, the outer part of the valve carrying a smaller disk valve within it, so that in case of very sudden openings of the throttle the outer part opens first, and the inner part later. This again gives a progressional control, not unlike that in the valve regulating the main air supply.



PEERLESS GASOLENE SAVER

By no means the least conspicuous exhibit is that of Charles E. Miller, New York, where there is the usual Miller assortment of practically everything that is needed on a car. A feature of the exhibit is the Miller porcelain spark plag, which. by way of a rather striking introduction, is being sold for 15 cents at the show. Pan-American brand lubricants, tire savers and polishes also are features.

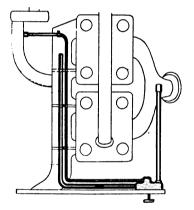
Portable garages, wood garages, stel garages, composite garages and motorcycle garages are manufactured by the Belmont-Stewart Iron Works, Beacon street, Boston. The firm also build garages to order, not only in the portable type but in brick, tile or cement. A specialty in the portable class is a Ford car garage.

Tires made of wool cloth enclosed in rubber are shown by the American Tire Co., Avon, Mass. The wool cloth is wound in circumferential layers and the core so formed is covered with a rubber outer casing vulcanized on. Compara-

tively thin cloth and many layers are used where the tire is not required to be very resilient but must carry a heavy load, while to obtain maximum resiliency the cloth is of great thickness and there are few layers. In a commercial vehicle tire the fabric is about 1/2 inch thick. while in a tire to replace a pneumatic on a passenger car the wool is about 1 inch thick. The sides of the tire so formed are straight because the layers of wool are of uniform width. The truck tires conform to S. A. E. requirements and are guaranteed for from 7.500 to 10.000 miles. Wool-and-rubber tires are said to have given 11.000 miles service on passenger cars.

#### For Pumping Up Ford Tires.

A motor-driven tire pump designed especially for Ford cars is shown by the Colstad Mechanical Laboratories, Atlantic, Mass. The pump and its bracket take the place of the Ford fan bracket,



"HUMEFYING" GAS SAVER

which is discarded; the fan is replaced by attaching it to the pump bracket. The single cylinder pump is driven from the fan pulley, in which a single hole is drilled. A lever throws the eccentric which actuates the pump plunger into engagement with the fan pulley. Bore and stroke are ¾ inch and 1½ inches, respectively. The capacity of the device is sufficient to inflate a Ford tire to 55 pounds in 3½ minutes.

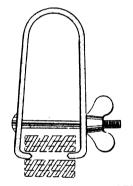
For the purpose of injecting a small quantity of steam into a motor with the fuel vapor the Yankee Motor-Economy Co., 19 Massachusetts avenue, Boston, Mass., has brought out a simple device which causes both hot water and hot air to be sucked into the manifold, the water vaporizing when it comes into contact with the air. A water pipe from the cooling system leads to an atomizer mounted on the dash, to which also an air pipe, taking air brought to a high temperature by contact with the hot exhaust mani-

fold, is connected; the air and water mingle at the atomizer and pass on to the intake manifold as a mixture of hot air and steam. The quantity is regulated from the dash. Economy of fuel and a reduction of carbonizing are claimed as results of the use of the device.

#### Simplicity in Spring Spreader.

Maximum simplicity in a tool of its type seems to have been attained in the Security spring spreader shown by the Security Reliner Co., Montgomery, N. Y. The object of the tool is to spread apart the leaves of a spring for inserting lubricant, and the form, as the accompanying illustration shows, is that of a big U with the ends turned inward and pointed, with a bolt and wing-nut for drawing the points toward each other. The natural spring of the steel spreads the points when the nut is slacked back.

The Lewis mechanical gearshifter, brought out by the Lewis Mfg. Co., Philadelphia, Pa., offers a means for elimi-



SECURITY SPRING SPREADER

nating the ordinary type of gearshifting lever and obtaining what amounts to automatic gear control, without the use of electricity or compressed air and without springs for meshing the gears. Briefly, the device, which is an attachment designed to be bolted to the top or side of the ordinary gearbox, has a set of gearshifting rods, one for each gear, and a selector finger or arm that can be moved to engage any desired gearshifting rod by a small control lever under the steering wheel.

#### How Automatic Gearshift Works.

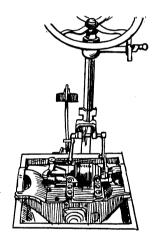
The actual shifting is done by pressing the clutch pedal in the usual way; the first part of the travel of the pedal throws out the clutch and brings the gears into neutral, and the last part pushes the gear into mesh. Neutral and reverse positions can, of course, be obtained by the proper setting of the control lever; before the reverse can be thrown in, however, it is necessary to

bring the lever up against a stop and then pull it out, so that accidental engagement of the reverse is impossible. Gears cannot be shifted unless the control is properly placed. The lever can be set in advance for any desired gear and the change made, when the time has arrived, by a simple pressure of the clutch pedal.

The mechanical shifter can be attached to almost any standard type of sliding gear transmission; it is not weighty and all the parts, with the exception of course, of the control lever under the steering wheel, are out of sight under the floor-boards.

#### Franklin Catalog from Franklin Printery.

When an automobile building firm gets out a catalog it is not usually considered a particularly notable event; but when a company gets out a catalog, and a good one, and does all the work in its own



LEWIS GEAR SHIFTER

print shop, the achievement is worthy of comment. The Franklin Automobile Co., of Syracuse, N. Y., has turned out from its own private printery its latest catalog, which is a piece of work that needs no apology whatever. On the contrary, from its embossed brown front cover, clear through to the last of its 23 pages, it is as fine a piece of presswork as one would wish to see.

#### Des Moines "20-Minute" Law Upset.

Declaring that the power delegated by the Iowa legislature to the city of Des Moines does not empower the municipality to specify how long a car may stand at a curbing, Police Justice Utterback, of that city, has overruled the city ordinance relating to this matter; 25 car owners who had been arrested were discharged. The ordinance made 20 minutes the maximum time that any car could stand at the curb.



# Dealers' Opinions.

Editor Motor World:

We read your article entitled "Devices That Prevent Nuts from Turning" in the February 26 issue, but we do not agree with you on the relative merits of spring nut locks versus nut locks designed to prevent nut movement only, which being the case, we wish to call your attention to facts that we consider defects in your arguments.

You state that spring nut locks compensate for looseness in holted construction, which we will agree is true; but in a very small degree. An engineer when desiring to use bolts determines the size of bolt required by strain on the bolted parts and then applies a bolt which is strong enough to meet that strain. Therefore, when a spring nut lock is used to compensate looseness. to be efficient, you would expect the nut lock to have the same holding strength as the bolt it is applied on. It is well known that there is no comparison in the holding power of a spring nut lock and a bolt of the same size.

It is my opinion that looseness caused by wear can only be remedied by tightening up the nut, and further, that part of this looseness is caused by the spring lock itself. The spring lock being made of very high carbon steel will no doubt cause considerable wear on the softer steel of the nut and seat with which it comes in contact.

To sum it all up, there is greater probability of looseness where a spring lock is used by the additional wear caused by having hard steel in contact with soft steel and by the turning of the nut than if a good positive lock was applied which absolutely prevents nut movement and which does not cause any additional wear or corrosion.

In addition to this, there is also the probability of examining a nut on which a spring lock is applied and, judging by the appearance, that it is tight, but out on the road when the car is in motion you might find that bolted parts are springing back and forward when jolted. Every jolt felt on a loose bolt on which a spring lock is applied will give. providing the jolt has more strength than the little spring lock.

We do not think that it will be long before the automobile manufacturers decide that it is the best practice to lock nuts by the use of positive locks which prevent nut movement. The only excuse for looseness then would be wear and stretching, which could be remedied by tightening up and locking again. It will also be evident that after tightened up once or twice the scale and uneven surfaces will become smooth and a large part of the wearing will cease.

JOS. R. ROYSTON,
Secretary-Treasurer,
American Nut & Bolt Fastener Co.

#### Buffum Passes on a Thought.

"If I Knew You and You Knew Me," is the title of an apropos poem which is circulated by F. W. Buffum, of the Buffum Tool Co., Louisiana, Mo., and which carries a thought that, if applied, would eradicate much of the misunderstanding and friction in business. It says:

If I knew you, and you knew me, 'Tis seldom we should disagree. But, never having yet clasped hands, Both often fail to understand That each intends to do what's right, And treat each other "honor bright." How little to complain there'd be If knew you, and you knew me.

Then let no doubting thoughts abide Of firm good faith on either side; Confidence to each other give—Living ourselves, let others live. But any time you come this way That you will call, we hope and pray. Then face to face, we each shall see, Then I'll know you and you'll know me.

#### For Lights on All Vehicles.

Alderman Carroll, of the New York City administration, is convinced that lights should be carried on all vehicles using the roads and would have horse-drawn wagons lighted after nightfall as well as automobiles. He has introduced the following ordinance in the Board of Aldermen.

"All vehicles using the public streets or highways of the city shall show, between one hour after sunset and one hour before sunrise, lights so placed as to be seen from the front and a light so placed as to be seen from the rear. If a dash lantern is carried it shall be placed on the left hand side, such light or lights to be of sufficient illuminating power to be visible at a distance of 300 feet; such light or lights shall show white in front, but may be colored on the sides.

"Every automobile shall exhibit, during the same period, two lamps showing white lights visible at a distance of 300 feet in the direction toward which the automobile is proceeding, and shall exhibit also a red light, visible in the reverse direction. The lamps shall be so placed as to be free from obstruction to light from other parts of the automobile.

"No operator of any automobile or other vehicle, while operating the same upon the public highway within the city, shall use an acetylene, electric or other headlight, unless properly shaded so as not to blind or dazzle other users of the highway or make it difficult or unsafe for them to ride, drive or walk thereon."

#### Propose New Automobile Law.

Aiming to replace New York State's Callan law, Senator Walter R. Herrick has introduced in the New York State senate, a new motor vehicle bill. which was drawn by Frederick R. Coudert, counsel to the National Highways Protective Association; the bill requires operators of cars to be licensed, empowers the secretary of state to revoke licenses for cause, suspends a driver's license in case of accident and revokes it if he cannot absolve himself of guilt, and makes the speed limit 15 miles in "built up" sections.

Fees are made higher and cars are reclassified; the five classes are: 1st, under 22 horsepower and 2,000 pounds, 50 cents per horsepower. 2nd, under 22 horsepower and over 2,000 pounds, 60 cents per horsepower. 3rd, between 22 and 36 horsepower and under 3,000 pounds, 70 cents per horsepower. 4th, 22 to 36 horsepower and over 3,000 pounds, 80 cents per horsepower. 5th, 36 horsepower and more, \$1 per horsepower. Trucks pay as above and \$10 extra for those above 2 tons; flat rate of \$10 for electrics except for an excess weight charge of \$10 for trucks.

#### Mt. Desert Still Bars Automobiles.

Automobiles are not to the allowed in the town of Mt. Desert, Me., this summer any more than they were allowed there last summer, for, as the result of action which was taken at the last meeting of the town commissioners, it was voted to leave up the bars against them. The vote favoring exclusion went 251 to 58.

Ohio Motorists Get Old Rates Back.
Having failed in its fight to inflict the
Warnes high-license fee upon Ohio motorists, the legislature in its last dars
enacted what is known as the King law

and which reestablishes the old rates. These are: Electrics, \$3; gasolene and steam cars, \$5; dealers, \$20 (was \$10); motorcycles, \$2.

#### MOTOR WORLD

#### **LOOKING BACKWARD UPON GRAND PRIZE INCIDENTS**

Figures That Indicate Hard Fighting in Early Stages - Pullen's consistent Driving a Conspicuous Feature of Race.

As a result of the highly successful running of the Vanderbilt Cup and Grand Prize races in the Far West the suggestion has been made that the two events be contested in California next year, too, Los Angeles managing the Vanderbilt and San Francisco engineering the Grand Prize. It is suggested that the Western Automobile Association could stage the Vanderbilt in the early spring, while the Grand Prize could be run in the fall. The exposition authorities have endorsed the appeal of San Francisco, and it is said that Golden Gate Park can be secured for a race course. To carry the idea further, it seems probable that the Californians will not rest content even if the 1915 events take place on the Pacific Coast, but will bestir themselves to annex them for succeeding years.

It might be imagined, perhaps, that the Grand Prize was not a particularly hardfought race, for Pullen's finish in the Mercer 40 minutes ahead of Guy Ball in the Marmon did not look anything like a "neck-and-neck" climax.

The fact is, however, that Pullen's easy times in the latter part of the race were won by hard work and an admixture of luck earlier in the contest. In the 33rd lap he had climbed into second place and Marquis, in the English Sunbeam, was 1 minute 50 seconds ahead of him when the Sunbeam car turned turtle. At that time De Palma, Anderson and Oldfield were a little more than 2 minutes behind the Mercer pilot, 6 seconds apart and running in the order named. Marquis had attained his lead when De

Stutz .....

6:46 7:02

Out on 2nd lap

Palma was delayed by trouble with his valves.

Further back in the race things looked very different. Up to the end of the 22nd lap, when he was forced to retire with a burnt-out bearing, Wishart appeared to have the race more or less clamped down; De Palma, who was second man, was 7 minutes 9 seconds behind him and the course was chasing back under the wheels of the Mercer at the rate of 84 miles an hour. In hot pursuit flew De Palma, Marquis, Anderson, Oldfield and Pullen in the order named, and just how hot the pursuit was is indicated by the fact that between De Palma and Pullen there was an interval of only

Wishart's mad flight kept him in the lead for the first 22 laps, when De Palma shot into the pacemaker's place and held it for 7 laps. The Italian must have had high hopes at this period of the race of adding the Grand Prize to the Vanderbilt Cup he already had won, but his old Jinx, doubtless stung into renewed activity, got into the situation in the form of a broken intake valve, which put one cylinder on the disabled list in the 29th lap.

De Palma was only 23 seconds ahead of Marquis when Wishart burned out a bearing and his wheels stopped going round, putting the Vanderbilt Cup winner in first place. Anderson was third, Oldfield fourth and Pullen fifth, the latter 4 minutes 31 seconds behind De Palma.

At the end of the 33rd lap Pullen was leading, 2 minutes 51 seconds nearer the unish than Anderson; Oldfield came only 9 seconds behind Anderson and De Palma, sputtering along on three cylinders but sticking gamely to the job, was 23 seconds worse off than the cigar-eating Barney. In the 24th lap Richenbacher and his flying Mason went down and out. Oldfield was exterminated in the 40th, taking his bechewed stogie

with him. Gil Anderson and his Stutz went out in the 45th. After that Pullen could have almost walked home.

Although it is conceded that Pullen. in winning the Grand Prize, established a record for that event with an average speed of 77.2 miles an hour, it is not so well known that the Mercer covered 300 miles faster than it ever had been covered in an American race. Tetzlaff set up a world record by covering 300 miles at the rate of 78.7 miles an hour; Pullen's time for the same distance brings his average to 79 miles an hour, which, though it cannot stand as an official record, is the best time that has been made for the distance.

While Chairman Shettler had guaranteed but \$15,000 to be divided up among the drivers as prize money, it developed that there was \$20,000 to split. The rules of the association preclude its keeping any of the money it makes.

#### Albany Show in "Fair Japan."

After having been postponed from February 23 because of the unprecedented snow storms, which held up trains carrying exhibits, the Albany Dealers' Association's show was opened on Wednesday evening, March 4, in the State Armory by Governor Glynn. The attendance was considerably better than had been expected.

The armory was decorated for the occasion in the style of "Fair Japan." The quaint Nipponese effects worked a complete transformation of the grim military building and elicited expressions of astonishment from the Governor that such a change in appearance could be made. No palms or flowers were permitted on the opening night; these, however, were added later and were much in evidence on "Society Day," which was March 6th. The show ran for a full week. Fifty exhibitors of automobiles and things pertaining to them displayed their wares effectively in the big

#### STORY OF THE GRAND PRIZE RACE AS TOLD BY LAP TIMES

Marquis Muth Janette Wishart	Sunbeam            Marmon            Alco            Mercer	6:15 6:50 6:30  7:20 6:39 6:37 7:03  7:28 7:25 6:15	Lap 5 31:25 32:43 36:24 32:09 34:08 31:58 31:09 37:32 32:24 35:18 35:14 30:01	1:01:56 1:05:26 1:12:08 1:03:57 1:08:10 1:03:24 1:04:35 1:10:15 1:04:23 1:09:22 1:09:46 59:44	Lap 15 1:32:12 1:38:39 1:47:47 1:35:27 1:42:34 1:34:41 1:35:25 1:43:32 1:36:00 2:18:51 1:43:08 1:29:30	Lap 20 2:08:29 2:42:03 2:24:10 2:07:04 2:17:27 2:06:22 2:17:32 2:07:36 3:22:47 2:20:57 2:00:09 2:26:44	Out on Out on Out on	Lap 30 3:12:38 3:49:37 3:44:51 3:12:07 5:03:01 3:11:03 3:14:53 3:21:58 3:10:37 25th lap 23rd lap 25th lap	Lap 35 3:43:16 4:22:38 4:25:13 4:07:08 5:39:57 3:49:58 3:48:57 Out on	Lap 45 4:52:47 5:32:52 5:49:02 5:48:31 Flagged Out on	
Janette		7:25	35:14	1:09:46	1:43:08	2:20:57					
Wishart Lewis	Mercer	6:15 7:02	30:01	1:11:23	1:49:11	2:26:44	Out on	25th lap			
Tetzlaff	Fiat		31:36 34:30	1:04:22 1:09:38	1:33:47 1:42:36		18th lap 18th lap				
Goode Cooper	Apperson Stutz	6:46	32:49	Out on (							



New York, N. Y.—Lincoln Tire & Rubber Co., under New York laws; authorized capital, \$5,000. Corporators—Olaf K. Pacht, David Gross and Jacob Cohen, all of 46 West 24th street.

Indianapolis, Ind. — Kuhns Auto Service Co., under Indiana laws; authorized capital, \$5,000; to conduct an automobile business. Corporators—Frank W. Kuhns, Brandt C. Downey and Eudorah L. Kuhns.

Port Jervis, N. Y.—George W. Case Co., under New York laws; authorized capital, \$5,000; to conduct an automobile business. Corporators—George W. Case, Anabel B. Case and Irene M. Kadel, all of 54 Front street.

New York, N. Y.—United Motor Owners' Stores, under New York laws; authorized capital, \$700,000. Corporators—Thomas Young, 25 Broad street; Mars Wheeler, Stapleton, S. I.; Henry J. Ryan, Rutherford, N. J.

Rochester, N. Y.—Curtis-Pembroke Co., under New York laws; authorized capital, \$10,000; to conduct an automobile business. Corporators—Henry A. Curtis, Charles J. Pembroke and Ida A. Pembroke, all of Rochester.

Brooklyn, N. Y.—E. G. Stache's Sons, under New York laws; authorized capital, \$6,000; to deal in motor vehicles, etc. Corporators—Rudolphe E. Stache, Ernest E. Stache and Otto G. Stache, all of Commercial and Box streets.

Buffalo, N. Y.—Mogul Truck Co., under New York laws; authorized capital, \$3,000; to deal in motor trucks. Corporators—Ethel M. Reickert, 25 Theresa place; Otto J. Reickert and August F. Reickert, both of 72 Pine street.

Rochester, N. Y.—Wagner-Dolph Co., under New York laws; authorized capital. \$25,000; to conduct a general motor vehicle business. Corporators—Geo. J. Wagner, Warner L. Dolph and Edward K. Van Almkirk, all of Rochester.

Rochester, N. Y.—Barclay-Rice Co., under New York laws; authorized capital. \$25,000; to manufacture automobile accessories, etc. Corporators—Estelle L. Barclay and James G. Barclay, both of Buffalo; James E. Rice, Rochester.

New York, N. Y.—Hartford Tire Co., under New York laws; authorized capital, \$10,000; to manufacture and deal

in rubber tires and accessories. Corporators—E. J. Forhan, F. B. Knowlton, and S. V. Dowlin, all of 154 Nassau street.

Little Rock, Ark.—Gay-Sreibach Auto Wheel Co., under Arkansas laws; authorized capital, \$120,000; to manufacture a patented motor car wheel designed to eliminate the use of pneumatic tires. Corporators, George R. Gay and others.

New York, N. Y.—Royal Welding & Radiator Co., under New York laws; authorized capital, \$2,000; to conduct an automobile repair business, etc. Corporators—Louis H. Moos, 501 W. 110th street; Benjamin Feldman, 858 Fox street.

New York, N. Y.—Indestructible Tire Corp., under New York laws; authorized capital, \$200,000; to deal in automobile tires. Corporators—Albert L. Potter, 78 West 178th street; John A. Inslee, 259 Broadway; Anselm F. Anderson, 34 Nassau street.

New York, N. Y.—Eastern Garage Keepers Protective Association, under New York laws; authorized capital, \$5,000. Corporators—Chester S. Walz, Glenbrook, Conn.; Thomas C. Walz, Pelham, N. Y.; John A. Sanborn, New Rochelle, N. Y.

Westchester, Pa.—Thomas Motive Power Co., under Pennsylvania laws; authorized capital, \$125,000; to manufacture a single stage air compressor for automobiles. Corporators—Theodore Pennock, East Marlborough, J. H. Thomas, and others.

Brooklyn, N. Y.—Montauk Auto Sales Co., under New York laws; authorized capital, \$5,000; to conduct a general motor vehicle business. Corporators—Louis F. Chase, 21 Orient avenue; Peter Ottati, 15 Old Bushwick road; Wm. F. Campbell, 902 President street.

Muncie, Ind.—Inter-State Motor Co., under Indiana laws; authorized capital, \$300.000; to manufacture automobiles and other motor vehicles. Corporators—F. C. Ball, Edward B. Ball, J. M. Maring, B. W. Twyman, T. F. Rose, Geo. A. Ball and F. D. Rose.

Brooklyn, N. Y.—Werchen Garage, under New York laws; authorized capital, \$2,500; to operate a garage and conduct an automobile business. Corpora-

tors—David Werchen and Daret S. Werchen, both of 699 Bushwick avenue; Philip Miller, 244 Myrtle avenue.

Buffalo, N. Y.—Velodrome Co., under New York laws; authorized capital, \$30,000; to hold and promote motor races of all kinds. Corporators—William M. Wilson, 25 Park View avenue; Dai H. Lewis, 70 Woodlawn avenue; Frederick Vokes, 185 Plymouth avenue.

Cleveland, O.—Auto Body Tank & Fender Co., under Ohio laws; authorized capital, \$10,000; to manufacture automobile bodies, tanks and fenders. Corporators — Albert Mendelssohn, Jacob Hartman, Hermann Ziegenbein, Norman A. Johnson and M. A. Ziegenbein.

Green Island, N. Y.—Van Curve-Light Co., under New York laws; authorized capital, \$10,000; to manufacture automobile lights, etc. Corporators—William H. Babbett, 18 George street; Theodore E. Vanderwerken, 13 George street; Robert Caldwell, 48 George street.

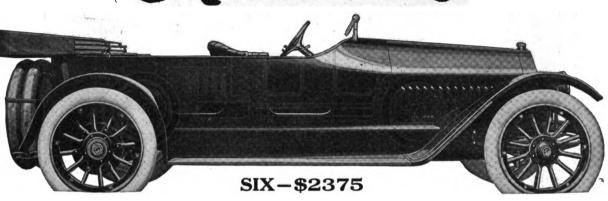
Syracuse, N. Y.—Fuller-Ashley Co. under New York laws; authorized capital, \$1,500; to engage in a general automobile business. Corporators—Ernest F. Fuller, 139 East Brighton avenue; Walter A. Ashley, 312 Oneida street; Arthur J. Sweeney, 510 West Onondaga street.

Wilmington, Del.—Diamond State Automobile Co., under Delaware laws; authorized capital, \$25,000; to manufacture and sell motor cars and other vehicles and deal in supplies for same. Corporators—J. F. Chapple and N. B. Mancill. both of Wilmington; T. C. Matshall. Yorklyn.

New York, N. Y.—Panama Tire & Rubber Co., under New York laws; authorized capital, \$15,000; to manufacture and deal in automobile tires, etc. Corporators—Arthur E. Schwartz, 222 West 59th street; George L. Lewis, Whitestone, N. Y.; Sidney V. Morris, 302 W. 22nd street.

New York, N. Y.—S. P. Vaporizer Counder New York laws; authorized capital, \$10,000; to manufacture and deal in automobile accessories, etc. Corporators—Julian Von Waldy, 1947 Broadway; Stanley Y. Beach, 125 East 23rd street; Romer Stevens, 198 Madison avenue.

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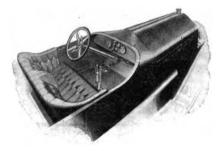
# The Winning Line of Cars

VERY dealer and every motorist in the country have been waiting for the right Six-and here it is. They've wanted a Six selling at the right price—they've wanted a Six built by a manufacturer with years of experience-and a reputation for building a reliable product of the highest quality. That's just what this new National Six is -the right Six at the right pricebacked by the quality, faith, integrity and honesty of product that have made the National car world-The National Company were the first builders of successful 6-cylinder cars, making their first in 1905.

This new National is nothing short of a marvel. Beautiful, powerful, efficient, economical and, in fact, the climax of the National's success in car making since its pioneer beginning. It embodies all the National's internationally recognized principles of superiority. No other manufacturer has ever built its equal.



National 40, Seven Passenger Touring Car



This shows the beautiful, graceful lines of the cowl and hood of new National Six; instrument board, with everything convenient; control levers in center; left side drive; access to both front doors, etc.





To see this new car is to desire it—to ride in it once is to determine to possess it.

#### First to improve European styles

Other makers have imitated the styles originated in Europe-but the National improves these advanced foreign designs. Nothing obstructs or spoils the continuous beauty of the long body lines. Both sides gradually converge toward the narrowed radiator, giving the whole car an original appearance and a "pointed" style. Smart slope from cowl to radiator.

#### Brief Specifications—National Six

Motor, six-cylinder, 33/x53/-inch, cast en bloc. Tire pump, integral part of motor. Clutch, self-contained aluminum cone. Starting and lighting, electric two unit system. Transmission, aliding gear selective type, three speeds forward, one reverse. Gauge 56 inches. Oiling, crank case constant level, force feed, with gear driven pump. Ignition, high tension, dual magneto with storage battery. Tires, 36x43/c. Firestone demountable rims. Air pressure gasoline feed, generated by small pump in crank case. Capacity 23 gallons. Automatic carburetor. Two sets of brakes on 16-inch rear wheel drums. Bevel gear drive through straight line shaft with universal joints and torsion member. Full floating rear sale. Left side drive. Access all four wide doors. Single springs, front, special National cantilever construction, rear.

Equipment:—Top complete with side curtains and boot, ventilating rain vision wind shield, extra Firestone rim. electric lighting and starting systems, 12-inch double bulb electric headlights, electric license tail light, Warner speedometer, electric horn, tools and jack.



National 40, Two Passenger Speedw

NATIONAL MOTOR VEHICLE CO., Indianapolis, Ind., U. S. A.



Every man who ever purchased a Pathfinder car is now a Pathfinder owner.

Some owners have purchased several Pathfinder cars during the various seasons.

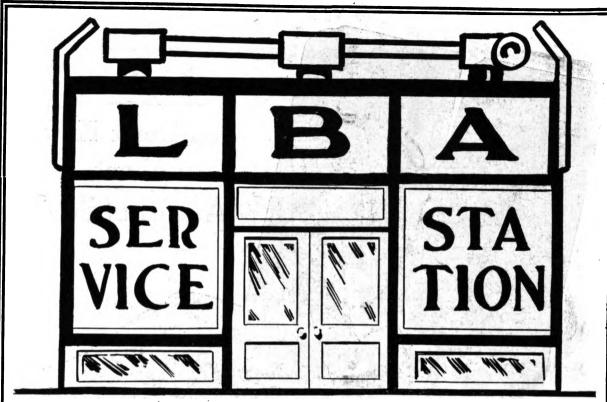
OWNERS: A stronger reason for your purchasing a Pathfinder could not be given.

DEALERS: If you hold the customers you make and continue to get new customers, in a few years you will have an exceedingly valuable business.

The Pathfinder has that record.

Write to-day stating the situation with you and asking for a copy of our 101 Reasons. Write us a long letter.

Motor Car Mfg. Co., 1138 Division St., Indianapolis



## The Storage Battery With a Service Station

Don't buy a car equipped with accessories made by obscure concerns who have not provided facilities for the proper care or repair of their product when occasion requires.

Especially does this apply to storage batteries used in connection with Electric Lighting and Starting Systems, when the battery becomes vitally important to the successful operation of the car.



#### STORAGE BATTERIES

are sold to stay sold and give uninterrupted, satisfactory service through a long life of usefulness. To insure this result and to protect 61349 users we now have established, in the United States and Canada 166

## **SERVICE STATIONS**

where you can have anything done to your 62323 battery that needs to be done-promptly and skilfully.

We are constantly increasing the number of 6233 Service Stations, so that eventually, no matter where you live you'll have (T.BA) service at your instant command.

## WILLARD STORAGE BATTERY CO., Cleveland, Ohio

New York Branch: 136 W. 52nd St.

Detroit Branch: 736, 738 and 740 Woodward Ave.

Indianapolis Branch: 438 and 439 Indiana Pythian Bldg.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO. Chicago Branch: 2241 Michigan Ave. San Francisco Branch: 243 Monadnock Bldg.

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knowledge of cars and their parts. Lack of knowledge is expensive.

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# The Most Specific and Satisfactory Basis On Which Any Tires Are Sold---

---is the triple guarantee that covers the Non-Skid, the Oilproof and the service features of



V. C. Tires are guaranteed not to skid on wet or greasy pavements, else returnable at full purchase price after reasonable trial.

The V. C. Oilproofing Process renders V. C. Casings immune to the rotting action of oil or grease wherever encountered. The oilproofing goes through and through the rubber, and is permanently protective.

The V. C. Guarantee of 4,500 actual miles is based on a low minimum of service through many years. V. C. Tires average greatly in excess of this guarantee—there being numerous records of 12,000 miles and upward on large cars.

The V. C. Guarantee means dealer advantage through consumer satisfaction—the only real dealer policy. Identify YOUR store with V. C.'s—and let us have your requirements at the earliest possible moment. The 1914 demand is becoming more and more pressing.

Pennsylvania Rubber Company

Jeannette, Pennsylvania

New York Chicago Cleveland Boston Pittsburgh San Francisco Los Angeles Detroit Kansas City, Mo. Minneapolis St. Paul Omaha Seattle Dallas Atlanta

An Independent Company With An Independent Selling Policy





# **Powerful**

## Quality a Guarantee of Service

HE sign of the satisfactory truck can be found only in the truck itself. Service maintained by almost contin-

uous adjustments, frequent repairs and by extravagant use of fuel and oil, is not efficient service. What dependable, business-producing, economical truck operation requires is ample provision against breakage, wear, complication and waste.

#### Strength and Power for Emergencies

Lippard-Stewart trucks embody completely this standard of successful service. The out-of-theordinary job, the unusual condition, which the truck at some time encounters, are anticipated everywhere in the construction. With power suited to roads of all characters-hills, heavy pulls or asphalt,

with reserve strength to safeguard against abuse or severe usage, with convenience of design and lack of complication that makes neglect almost impossible, the Lippard-Stewart is prepared for commercial work as no other truck.

#### Worm Drive a Step Ahead



The elimination of drawbacks of drive systems less up-to-date, like jack-shaft and chains or double reduction axles, is an accomplishment of the Lippard-Stewart worm and gear-a mechanism famed for its

great success abroad, and now accepted as the logical system of drive for commercial cars. Its saving of 7% to 12%

of power transmitted to the rear wheels, its protection from dirt and grit, its great simplicity, its wearing qualities, its steady application of power, its absolute silence—all these characteristics are strong factors contributing to the Lippard-Stewart reputation for exceptional service.



#### Trucks for Many Purposes

Lippard-Stewarts are built for either heavy loads or light delivery. Model F carries 1½ ton with an absence of effort and racking strains that is possible only with worm drive and liberal power. The truck of 1500 lbs. capacity has made an enviable record for itself in over 60 lines of trade. The use of either bevel drive (5 to 1 ratio) or worm drive (6 to 1 ratio) makes this model applicable to practically every operating condition.

Repeat orders and large installations by Hale Bros., San Francisco; Bon Marche, Seattle, Wash.; Boggs & Buhl, Pittsburgh, Pa.; Larkin Co., Buffalo; Parcel Post, Brooklyn; Rogers, Peet & Co., New York; Kolb Baking Co., Trenton, N. J.; H. S. Barney Co., Schenectady, N. Y., and many other firms of equally keen business judgment, are final endorsements of

Lippard-Stewart

1½ ton chassis, worm drive \$2300; 1500 lb. chassis, bevel drive (pneumatic tires) \$1650, worm drive (solid tires) \$100 extra. Bodies for many uses.

#### **Lippard-Stewart Motor Car Co.** 1734 Elmwood Avenue, Buffalo, N. Y.

## "American" Axles



# Present the Highest Achievement In Axle Efficiency

That "American" Axles possess an excess of quality as compared with any other axle manufactured here or abroad, is known and admitted by the trade generally.

They are, therefore, regarded both by car makers and car owners as an investment in efficiency.

It is simply the old, old story of the best always being the cheapest.

The superior design and materials employed, and the unexcelled workmanship of these axles, give a return in power gained, and in silent, luxurious ease of motion, that far outweighs the investment required.

In "American" Axles you may have the option of our own Bevel Drive, or that recognized leader of all Worm Drives, the American Lanchester-Daimler.

The adjusting and full floating features of "American" Axles are fully covered by our own patents and by shop lights from other patentees.



THE AMERICAN BALL-BEARING CO., Cleveland, Ohio

# REDTAG



# FOR PLATINUM POINTED

Mosler Spit Fire Plugs

Genuine Platinum Point Guaranteed Forever

Energetic Ignition

Greater Power

A. R. MOSLER & CO.

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# MOTOR OIL INTO

# EROIL

OTHER OIL SINK
THE INVADER OIL
GRAVITY AND IS
FROM CARBON

COMPANY, Inc.

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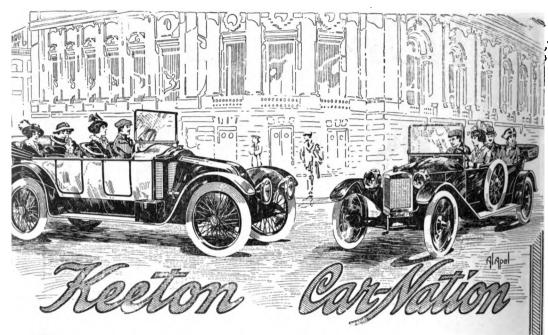
Philadelphia Branch: 113 Arch St.

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#### Two Cars That Command Your Attention

The New Keeton Six is not ordinary in any sense of the word.

Distinction is written all over it.

The Keeton Six is a car that commands instant attention in any company - that stands out from the rest-a pleasing, powerful exponent of "class."

In Keeton Sixes you secure a "foreign" car in all the essentials—as it ranks with the nnest products of Europe in design, construction and finish, yet—its price is only about one-half that of an European car.

The mechanical features of the Keeton are of the highest order, based on sound engi-

neering principles.

#### Keeton Specifications and Equipment

First, don't overlook the length-wheelbase of then the motor, six cylinders, 48 horse power, very silent, most powerful.

Four speeds forward transmission, improved

cooling system with radiator back of the hood instead of in front.

stead of in front.
Electric starting and lighting, five interchangeable wire wheels, 4½ inch tires, power tire pump. All these, together with the regular accessories, make the Keeton appeal to those who like distinction, combined with comfort.

Price F. O. B. Detroit, Keeton seven passenger, \$3,250. Two passenger body, if desired, at same price, \$3,250.

The Car-Nation is Standard in every way and the leader of the small car class.

It has all the good qualities in style and performance of the high priced cars—yet has light weight and low initial and upkeep

See that "V" shaped radiator, notice the strong wire wheels, also the stream line body—there is "class" enough for the most exacting.
It has "American snap" combined with a

As a Car-Nation dealer you could fill your territory with "Car-Nations"-it appeals to people in all walks in life.

#### Car-Nation Roadster, \$495 Touring Car, \$520, As Catalogued

This "big little car" has a unit power plant, with 4 cylinder motor, large valves and bearings silent and powerful.

Has three speeds forward and reverse, bevel gear drive with one universal joint; Hyatt Roller

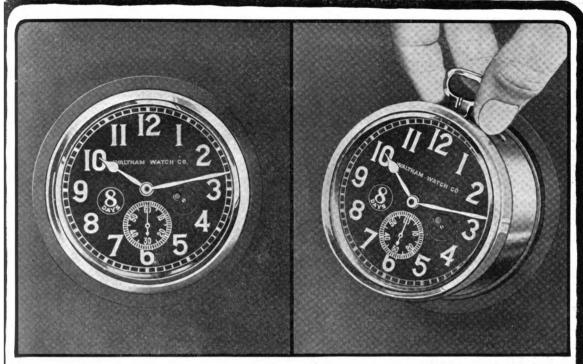
gear drive with one universal joint; Hyatt Roller Bearings in rear axles.

Wire wheels, 30 x 3 inch, demountable, clincher tires, wheel base 104 inches, horn, head and tail lamps with set of tools.

Prices, 2 Passenger Roadster, \$495; four passenger Touring Car \$520, as catalogued.

A card asking for our "Triple Test" booklet will be promptly answered.

#### The American Voiturette Company Detroit, U.S.A.



Dial flush with dash

Model C

Winds without removing

# Waltham Automobile Timepieces

Waltham Automobile Timepieces are the first which have ever been constructed specifically and exclusively for automobiles. They are not adaptations, but are scientifically designed and constructed for motor-car use.

This is indicated by the "C" model shown above. This model is sunk in the dash and the illustration to the left shows the dial flush with the dash. All attachments are concealed and the timepiece is an integral part of the finest car, harmonizing with it in elegance and simplicity.

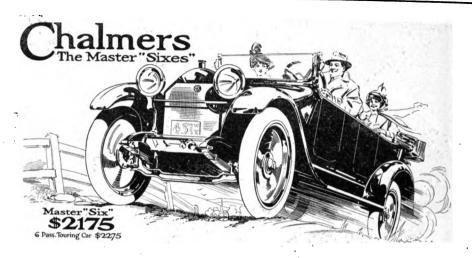
The illustration to the right shows the timepiece extended for winding. A turn of the wrist releases a spring which projects the timepiece from its niche in the dash, permitting the key to be raised for winding. After the key is

turned back, the timepiece is depressed to its former level, and locked in its normal position by another turn of the hand. The winding key also sets the timepiece, which is thus never removed from the dash. An indicator on the dial shows red when the timepiece needs winding, (once in 8 days).

All Waltham Automobile Timepieces are supremely accurate timekeepers. They are built to resist excessive vibrations and temperatures. Compared with them the usual "automobile clocks" of commerce are but so many "toys".

Motor-car owners, dealers, and manufacturers who want timepieces in conformity with high grade cars should profit by the unique merits of the Waltham.

Waltham Watch Company, Waltham, Mass.



### The Pick of the Nation

HAILED at its announcement as the most wonderful car on the 1914 market, the Chalmers Master "Six" has made good the rosiest predictions of those wise in the automobile world. It has been the greatest moneymaker that Chalmers dealers have ever had. And over 700 dealers testify to the splendid business they have had from selling Chalmers cars year after year.

The Master "Six" is literally the "pick of the nation," the choice of thousands of the country's most experienced and most critical quality-buyers. The name and fame of this great car has spread until wherever motor cars are discussed the Master "Six" is known as the "most advanced and most popular car on the market." People have bought Chalmers "Sixes" from the showroom, instead of having to be sold these cars, at the usual expense to the dealer.

#### A Six-Cylinder Missionary

The Master "Sixes" have done more than give handsome profits to Chalmers dealers, please the thousands who have invested in these splendid cars, and keep the big Chalmers factory running full force through the year. They have made the path of all "Sixes" easy. They have led the way in proving the superior luxury, smoothness and economy of the "Six" over any other type of car. They have made "Sixes" supreme in the "\$1800 and over" class of cars.

The Master "Sixes" have taught people to buy on performance and records. They have proved that "Sixes" are just as economical as "fours"—more so when rightly priced, for with equal power and the same weight to pull, six-cylinders have easier work than four. Lack of vibration makes longer life and the extra flexibility, safety and silence of the "Six" cost nothing extra except perhaps in first cost.

So people have learned these things through the Standard Road Test and the actual service of the Master "Sixes." Every new owner has been a booster and Chalmers business has grown to record-breaking proportions.

### Are You Sharing in the Profits of Chalmers' Dealers

Wherever people live, there are many prospects for Chalmers "Sixes." Compared with other cars no dollar-for-dollar value is greater than theirs. If there is no Chalmers dealer in your vicinity, it is distinctly worth your while to handle such cars as these. There's a style and price for every buyer who wants real style and service and up-to-dateness in his car. Let us hear from you.

Chalmers Master "Six," 2, 4, 5 passenger
Chalmers Master "Six," 6 passenger
Chalmers Master "Light Six" Touring Car
Chalmers Master "Light Six" Coupelet
Fully equipped F. O. B. Detroit

Chalmers Motor Company, Detroit

#### Stewart Motor Driven Air Pump saves Time, Strength—and Tires

EVERYBODY dreads to pump a tire by hand on the road. It generally means half an hour or more of hard work. For that very reason, a tire pumped up on the road is seldom pumped to the correct pressure. It is under inflated and driving on an under-inflated tire means quick death to that tire. Stewart Air Pump your motor does the work-in 5 minutes or less-and you are certain of correct air pressure in the tire.

**\$15** 

Complete with Air-Pressure Gauge and 13 feet of hose.

> Double air valves, insuring positive operation

Cylinder beautifully machined. Fins mean perfect cooling

Piston oiled by oil soak-ed wick

Air intake

Clutch Hardened steel shaft

Under-inflation results, every time, in "rim-cutting"—in bending and quick wear of side walls—in breaking of fabric through striking stones and other sharp objects-in friction between inner tire and tread, taking the life out of the rubber and removing any patches that may be on inner tube. An under-inflated tire drags on the road decreases miles per hour per gallon of gasoline—increases running cost per mile.

The Stewart Air Pump, mounted on the motor and driven by the motor, is the surest means for avoiding all this delay, annoyance, labor and expense. All you have to do is to throw a lever and watch the air pressure gauge, while your Stewart Pump inflates the tire to exactly the right pressure.

#### Stewart One-Cylinder Air Pump

This is mounted right on the motor. Simply throw over the lever and the pump operates instantly. Throw out the lever when tire or air starter is sufficiently blown up. The base of the pump is of aluminum. The piston is steel, hardened, ground and lapped. Connecting rod is hardened steel. Cylinder is a finely machined piece of work, air cooled, with fins which insure perfect cooling. The piston rubs against an oil-soaked wick which supplies every bit of oil it needs, and yet prevents one particle of oil from getting into the cylinder. This wick projects outside, where oil is dropped on. The crankshaft is provided with a separate oiler. Base of the pump is open, so that should there be any free oil, it will drop entirely out of the pump. The air intake is screened so that no dirt can enter cylinder. There are two air valves as a double precaution against leakage or failure to work. There are no leather or rubber packings to wear and cause leakage. It's capacity is such that it will fill a 36 inch var 41-2 inch tire in less than 5 minutes. Price with air presure gauge and 13 feet of high grade connection hose, complete, only \$15.

#### Stewart 4-Cylinder Air Pump

For those who want a pump with larger capacity we have designed a 4-cylinder model, with real motor bearings, steel pistons, drop forged crankshaft, hardened steel connecting rods, and a most satisfactory oiling system. No rubber or leather piston packings to wear out, but built like an automobile motor. Fins on cylinders assure perfect cooling. Complete, with air pressure gauge and 13 feet of hose, only \$25.

Stewart-Warner Speedometer Corporation

Factories: Chicago, Ill., and Beloit, Wisc.

17 Branches and Service Stations in all cities and large towns.

3 FEET OF HOSE

AIR PRESSURE GAUGE



# MANY OF ROSE



EVENTS have proven that mor courag and ability ar required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY New Haven, Connecticut You don't have to get out—you sit right in your seat—Snap!—Snap! Collins Curtains go right in place—stay there—and protect your car from the heaviest downpour.

# Collins Ready Curtains

There's no trying one piece all over the car before you find out where it fits. Collins Curtains are strapped to the bows under the top, right at your fingers' ends. Just undo the straps and they slide right into place.

It isn't ever necessary to have the occupants pile out—day or night you'll find Collins Curtains in their regular place, ready for instant service. Collins Curtains do not interfere with the lowering or raising of the now popular "one-man-top"—there is no cable or mechanism to get in the way and obstruct operation.

You can enjoy the many advantages of Collins Curtains if you but specify them for your new car. Most manufacturers and dealers will comply with your request if you make it *emphatic* enough.



Collins Curtains are now regular equipment on Cadillac, Chalmers, Moline, Paterson, Winton, Stearns-Knight, Cole, Haynes, Pullman, Havers, Herreshoff, Jeffery, National, Lyons-Atlas, Apperson, Moon, Velie, Davis, Speedwell, Jackson, Pratt, Palmer, Stanley, McFarlan, Henderson, Kline, Lexington and Pope-Hartford cars.

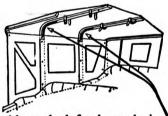
You can have Collins Always-Ready Curtains on your new car. You can have Colling Always-Ready Curtains on the car you are now driving.

We license top manufacturers to furnish Collins Always-Ready equipment with new tops or to equip old tops.

To Ford Owners: We can furnish Collins Always-Ready Curtains for Ford cars.

Any top builder can and will apply them for a nominal charge. The Collins attachment is applicable to any top and to your old style curtains.

There are some imitations and evasions of the Collins patents, which in some respects resemble Collins Curtains, but they do not have Collins advantages.



Always look for the exclusive Collins curved bracket bar and the Collins license tag.

If you care to examine the Collins Curtains, you can do so in the display rooms of any car having them as regular equipment. Write us, and we will arrange, without obligation to you, for you to see them.

Novelty Leather Works Dept D Jackson, Michigan

## Rushmore Starters In Europe

The following builders of European Cars, after studying all the leading American electrical systems, have adopted The RUSHMORE STARTING AND LIGHTING SYSTEM as standard factory equipment for all cars:

Fiat Lancia Bianchi Isotta-Fraschini De Dion-Bouton

> American purchasers of the following imported cars also enjoy the benefit of complete Rushmore equipment:

Mercedes Delaunay-Belleville Austrian Daimler

The following American cars have adopted Rushmore equipment:

Simplex

Knox

Stafford

Alco

S. & M. Crane

Mercer

Regal

Kline

Watch the List Grow?

Rushmore Dynamo Works, Plainfield, N. J.

LONDON PARIS BERLIN

# The Vulcan Electric Gear Shift

heretofore made and sold by the Vulcan Motor Devices Company of Philadelphia, Pa., will hereafter be manufactured and marketed by

### The Cutler-Hammer Mfg. Co.

Milwaukee, Wisconsin

EXCLUSIVE LICENSEE UNDER THE VULCAN PATENTS



#### The Vulcan Electric Gear Shift

operating in connection with any electric generating system, entirely dispenses with the old-fashioned hand lever and enables the driver of an automobile to shift gears electrically by merely pressing a push-button. When used with an electric starting and lighting system it provides the last thing necessary to make the gasoline vehicle an electrically controlled car.

Here are some of its advantages over the hand lever gear shift:

First —It is easy to operate—no stooping over—no muscular effort required—a woman can operate it as easily as a man. Merely push the button and depress the clutch pedal and the solenoids under the car respond with an instantaneous pull of 150 pounds.

Second —It can be operated without removing the hand from the steering wheel or the eye from the road

Third —It enables gears to be shifted literally with the speed of lightning, a great advantage when worming one's way through the congested traffic of a city's streets.

Fourth—It enables the driver to anticipate speed changes without actually changing the speed until ready to do so. The circuit to the gear shifting solenoid is completed only when a push-button is pressed and the clutch pedal is pushed all the way down. Pressing one of the selective push-buttons produces no effect. Slipping the clutch produces no effect. But press a button and push the clutch pedal all the way down and the gears are shifted instantly.

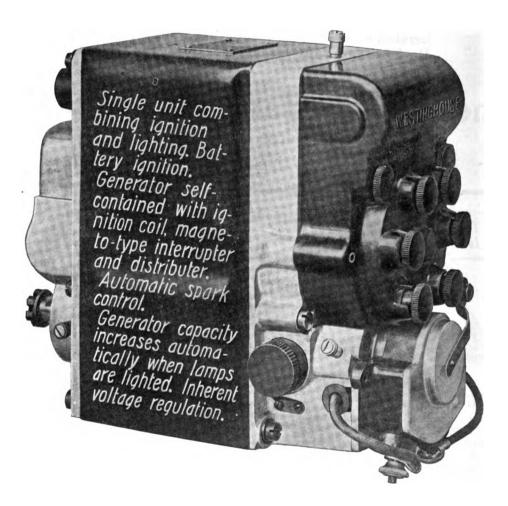
Fifth —The clutch is always fully disengaged and the gears are always drawn to the neutral position mechanically before a shift is made, thus rendering it impossible to strip a gear.

Sixth —The amount of current required to operate the Vulcan Electric Gear Shift is very slight, as current is consumed only at the instant the gear shifting solenoid is energized.

Seventh — The Vulcan Electric Gear Shift provides the one thing needed to make the gasoline vehicle an electrically controlled car. The starting crank has gone. The hand lever gear shift will follow it. This is the age of electricity.

All essential features of automatic gear shifting are covered fundamentally for the United States by the following Vulcan patents: 925270 dated June 15, 1909; 930029 dated August 3, 1909. Other patents pending.

### Westinghouse Lighting and Ignition



### Westinghouse Electric & Manufacturing Co.

#### To Dealers and Repair Shops

Send us your name and we will mail you a complete set of instruction books on Westinghouse Electric Starting, Lighting and Ignition Systems, and place your name on our naining list to receive new instruction books as issued.

Automobile Equipment Division East Pittsburgh, Pa.

Member Society for Electrical Development "Do it Electrically"

## Not Coming---It's Here!

The Most Potent Factor in the Automobile Industry—and That Means in the World



Shipping 100 cars per day now—and just getting into our stride. 200 cars per day in April.

500-car days our objective—just as fast as machinery can be made and installed and men trained.

By the way—where now are those who said we couldn't? What have they accomplished—where are they?

## Maxwell Motor Company, (Inc.)

**Detroit** 

Michigan

Dealers and Service Everywhere



#### Are Better Tires for You to Use

#### Guaranteed

in writing

(as they have been continuously guaranteed for nine years.)

LET your choice of tires be Ajax for the new season, for Ajax are best for your service. The written guarantee of 5000 miles assures the higher in-built quality of Ajax tires.

The dominant, all-powerful factor in realizing Ajax quality is our own steadfast determination to make Ajax tires better than other tires, and they are better.

The realization of our ambition for quality, too, comes largely from a well ordered routine of continuous 24 hoursdaily operation, without lay offs or interruptions. The whole plan of Ajax tire building is keyed to concert pitch and success comes from singing to the key.

See the Ajax dealer or write us.

"While others are claiming Quality we are guaranteeing it."

#### AJAX-GRIEB RUBBER COMPANY

1796 Broadway, New York

Branches in 18 Leading Cities

Factories: Trenton, N. J.



# VEEDOL Is On the Market

Dealers—You will want to be posted about VEEDOL. All your customers will soon be talking about it.

We want a responsible representative in your territory. If there is no agent in your vicinity write at once for particulars of our new selling plan in connection with our consumer advertising campaign.

VEEDOL will be a big business builder for it will give satisfaction to your customers and profit to you from the start.

VEEDOL gives the most nearly perfect lubrication with the least carbon deposit.

VEEDOL is a proven oil made from Pennsylvania petroleum—the result of our 30 years of experience with every kind of lubricating oil.

# Platt & Washburn Refining Co.

5 Broadway

**New York City** 

Incorporated 1885



#### **Get Weed Tire Chains** at Once!

"I know you are a careful driver, but it is best to adopt every device to prevent accidents.

"I can't afford to take any chances. We have all foolishly depended on rubber alone long enough. It's time to awake to our responsibility. So go at once and buy a complete equipment of Weed Chains and never start out without them when the roads or pavements are slippery or greasy."

#### Weed Anti-Skid Chains

Insure Against Anxious Moments



Probably no other device has done so much to raise the factor of automobile safety as WEED CHAINS. They are the proverbial "ounce of prevention" against skidding, the cause of over ninety per cent of all automobile accidents— Life Insurance and Accident Insurance Companies strongly endorse them and recommend their use. Taxiown protection, insist that their drivers put

#### them on when the streets are wet or slippery. **Increasing Demand**

for WEED CHAINS makes them the most profitable Automobile Accessory handled by Dealers—Quick and Steady Sales—No Dull Seasons—No Dead Stock—Easily Handled—Liberal Profits—Universal Satisfaction.

Attractive, convincing, decorative, lithographed hangers supplied to dealers upon request.

At all dealers selling Auto Supplies

Weed Chain Tire Grip Company 28 Moore Street, New York, N. Y.

Manufactured for Canada by nion Chain Company, Limited; Main Office, Suite 801 Shaughnessy Bidg., Montreal, Canada













#### Good Cable Essential

In the early days, when only an ignition system existed, and particularly when automobiles were not rated for their reliability a poor quality of cable might have answered.

If a cable gave out in those days only a few minutes' time was required to take out the old cable and replace it with new cable.

Since the advent of electric lighting and starting devices and electric gear shifts high quality cable is essential to get 100 per cent efficiency.

It is practically out of the question to expect a car owner to be familiar with every part of his elec trical system.



The car maker as well as the starting and lighting manufacturers owe it to themselves and their customers to use the best cable they can buy to make the wiring permanent and effective.

Packard high quality cable alone meets all of the exacting requirements. Every foot of Packard cable is submitted to rigid tests which eliminate all danger of ever getting a piece of defective cable. It costs a little more because it lasts longer and always makes good.

#### This Hanger Free

A 16x20 six color reproduction of the Packard Girl painting by Liebscher will be sent you with your initial order. Samples of cable and prices on request.



The Packard Electric Co.

Dept. D

WARREN, OHIO















#### \$5 and Immortality

The Lincoln Highway will last as long as the American Nation lasts. Ever generation of Americans through all time to come will look back in grateful re membrance to the present generation which is building the Lincoln Highway Thus do we, the builders, become immortal.

The most famous road in the world is the Appian Way, built by the Romans 2,000 years ago. Compared to the Lincoln Highway, that road is a schoolboy's path. The Appian Way extends a short distance through the Italian peninsula. The Lincoln Way stretches for more than 3,000 miles from coart to coast, across the richest continent on earth.

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Along the Lincoln Highway all who travel shall be forever free.

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Send \$5 today and get the Highway insignia for your office and your family rehicle. Send \$5 whether you own a motor car or not. This road isn't for motorists only—it's for all the people and all the people ought to build it. Send \$5 today—TODAY.

Pennant illustrated is in four colors, 36 inches long, at \$1.00 per pair (rights and lefts). Decorate your car and BOOST.

#### The Lincoln Highway Association Detroit, Michigan

Space contributed by Motor World

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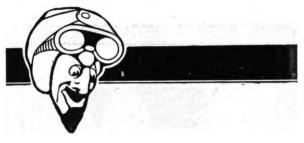


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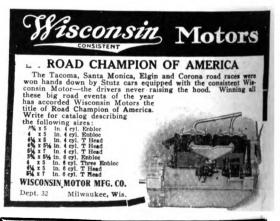
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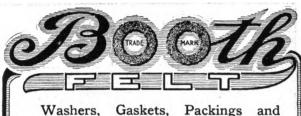
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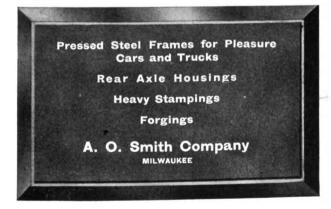
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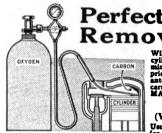




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PREST.

71 5P

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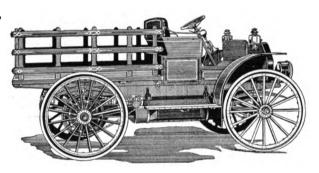
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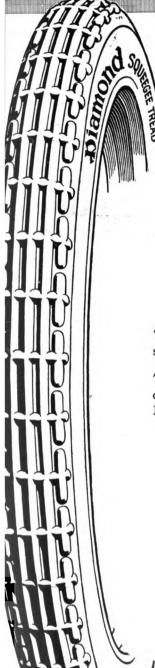
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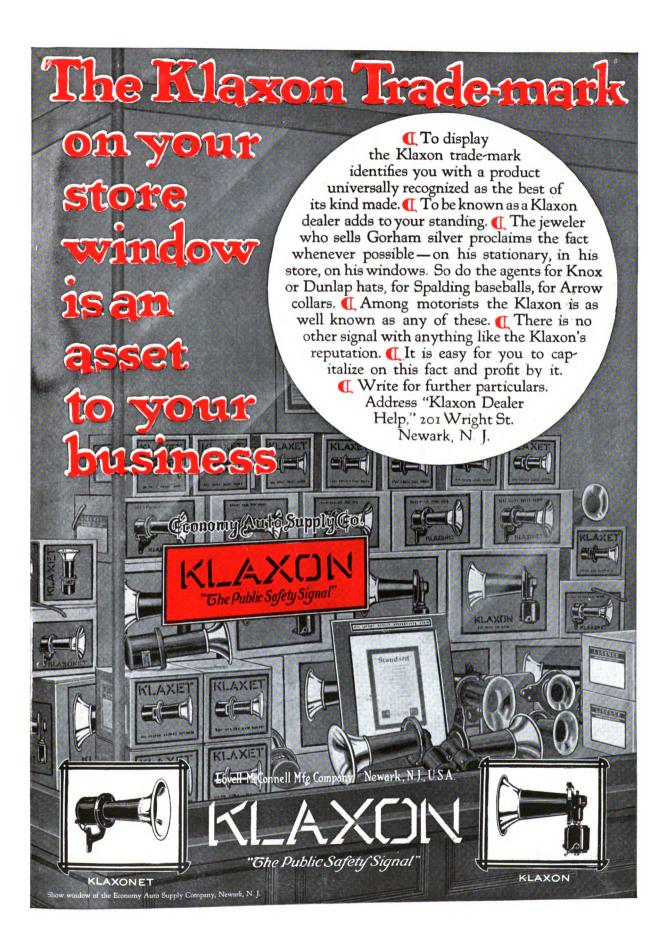
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HERE are few dealers who can't sell the kind of car a customer wants. Sales are lost by trying to sell the kind of car a customer does NOT want.

Buyers of electric cars usually have positive opinions as to the kind of car they want. Moreover those opinions are usually based on actual experience or expert advice.

The dealer who argues against a customers' desires, risks a sale Yet most dealers find argument necessary, because they can't satisfy with the line they have

We, however, are able to offer dealers a complete line—the line of least resistance. It is the first time a complete line of electric cars HAS been offered dealers—and the territorial selling-rights are extremly valuable.

The illustrations and specifications on this page represent only a part of the line, but they should convince you that every desirable feature is incorporated in one or more of these elegant cars.

Write today for dealer-proposition. It's exceptionally good.

#### The American Electric Car Co.

Pleasure Car Sales Office Commercial Car Sales Office

Payne and Fortieth, Cleveland Saginaw, Michigan

**CLEVELAND** 

FACTORIES CHICAGO

**SAGINAW** 



Argo Model C. Coupe; 5-Passenger; Wheel-Steer; Foot Speed Control; 40-Cell, 11-Plate Exide Hatteries; 38x4-inch Cushion Tires or 36x4-inch Preumatic Tires; 110-inch Wheelbase; Standard Tread.



Broc, Model 29, Brougham; 4-Passenger; Rear-Drive; Lever-Steer; Hand Speed-Control; 40-Cell, 11-Plate Exide Batteries; 36x4-inch Cushion Tires or 3x4-inch Pneumatic Tires; 96-inch Wheelbase; Standard Tread.



Borland, Model 50, Brougham; 4-Passenger; Forward and Rear, Drive Lever-Steer; Hand Speed-Control; 62-Cell, 11-Plate Exide Batteries; 1684inch Cushion Tires or 34x4-inch Pneumatic Tires; 96-inch Wheelbase; Standard Tread.

7



Trade Paper Giving the World's Motor New

ol. XXXVIII No. 13

New York, March 19, 1914

Ten cents a c

# One Unit For Starting One Unit For Generating

That is the principle of the Gray & Davis TWO-UNIT system.

It means that each unit has one function to perform and only one.

With the Single-Unit system one unit is asked to accomplish two and in some instances three functions.

One separate Unit for starting insures concentrated effort.

One separate Unit for generating greatly increases efficiency.

There is no straddling, no attempt to accomplish several different functions with one device.

The instant the Gray & Davis starting motor cranks the engine it comes to a complete rest, avoiding useless wear and wasted effort.

This is but one of the many reasons why you should adopt the-

# GRAY & DAYIS STARTING-LIGHTING SYSTEM

. .

**Boston** 

Massachusetts



#### Rough Riding Upsets Your Best Selling Talk

F what avail are all the salesman's arguments if his car does not measure up to the customer's ideal of comfort on the road? Comfort is essential to conclude the sale and true comfort is best made certain by the

# Truffault-Hartford SHOCK ABSORBER

"The Pioneer and the Best"

Long recognized by motorists as an essential part of every car's equipment and today the only shock absorber included as standard equipment on leading cars.

Controls all excessive spring oscillations arising from road surface inequalities, insures maximum possible steadiness and comfort to the occupants, protects

the machinery from destructive strains and greatly reduces the wear on tires.

Are they fitted on the car you sell? Customers expect them and dealers are justified in demanding this consideration from the manufacturer.

Four models ranging in price from \$16 to \$60 per set of four.

#### HARTFORD SUSPENSION CO.

E. V. HARTFORD, Pres. Office and Works: 142 Bay St., Jersey City, N. J. Manufacturers of Hartford Electric Starting and Lighting System

BRANCHES
NEW YORK—1700 Broadway,
NEW YORK—212-214 West S8th St.
BOSTON—319-325 Folumbus Ave.
CHICACO—1453 Michigan Ave.
PHILADELEPHIL 1453 Morgan St.
KANSAS CITY—1467 Vitre St.
JERSEY CITY—1467 Morgan St.
KANSAS CITY—1867 ON Cookbard Ave.
DETROIT—300 Wookbard Ave.
INDIANAPOLIS—425 No. Capitol Blvd.

Chanslor & Lyon
San Francisco Portland
Seattle Fresso
Spokane
Los Angeles
Oughlin & Davis Cheinnat!
Oughlin & Ou

Victoria

Coughlin & Davis, Circinnati, O.

Dyke Motor Supply Co., Pittsburgh, Pa.

Pennsylvania Rubber & Supply Co., Cleveland, O.

Burnett & Chandler, 311 Halsey St., Newark, N. 4.

### A Guarantee of Service! A Guarantee of Safety!

These are the factors of successful business our new policy places at your command.



hereafter will be sold under a definite

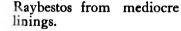
#### ONE YEAR GUARANTEE

If Raybestos fails to give actual wear of one full year from the date it is placed on the brakes, we will furnish new lining without charge. This guarantee applies to all types and weights of pleasure cars and to all light trucks.

Thus we not only guarantee the physical properties of our goods but put a definite and wholly adequate guarantee of service as well.

Raybestos is identified in two ways: Every foot of this material has the name "Raybestos" stamped upon it.

Every roll of this material has a silver edge. Look for these markings for they distinguish

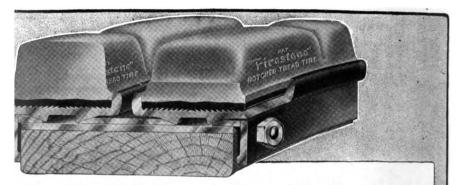


Every dealer should insist upon the cars he sells being equipped with brakes lined with Raybestos and every dealer should handle Raybestos and do his

relining with Raybestos, because it is a brake lining he can stand behind, as its makers stand behind the service of every Raybestos lined brake.



THE ROYAL EQUIPMENT COMPANY 1379 BOSTWICK AVENUE, BRIDGEPORT, CONN.



THERE is always plenty of business ready for the man whose service is ready. And there is no better way to keep your truck service always in commission than to equip it with Firestones—the tires of sturdy, dependable wear.

The Firestone Quick Removable Rim Equipment supplements the work of our service stations. Your own drivers can make the change quickly and easily.

# Firestone

# Truck Tires and Rims A Style for Every Load, Road and Service Requirement

Concentrated, specialized efforts to make the most efficient tire in the world for heavy service have evolved the Firestone Notched Tread Truck Tire. The notches eliminate traction wave, and the continuous base absorbs vibration and distributes shocks. The rigid side channel, with upturned flange, protects the base and adds strongest possible support to fastenings. Made in single and dual treads. The quality of Firestone rubber and Firestone treatment gives the exact shading for long, strong, active service.

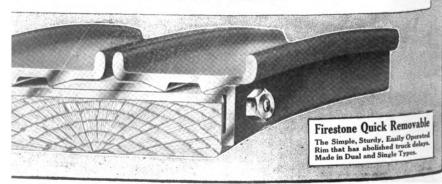
We take especial care to see that your trucks are equipped with the exact tire suited for their carrying and travel conditions. Expert service in all cities. Write for catalog. Then telephone for the Firestone man for expert advice on the right equipment for your special needs.

The Firestone Tire & Rubber Co., Akron, O.—All Large Cities

"America's Largest Exclusive Tire and Rim Makers"

Pneumatic Tires, Truck Tires, Pleasure Electric Tires, Carriage Tires, Fire Apparatus

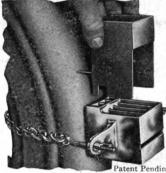
Tires, Rims, Tire Accessories, etc.



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# 50 Now Buys the World's Greatest Tire Vulcanizer



We've cut the price of Positive Portable STEAM Tire Vulcan-STEAM THE Vulcanizers from \$5.00 to \$3.50 — and build a better VULCANIZER! To sweep unworthy competition from the field — competition that was the transfer of the state of the same of th petition that was hurting the entire indus-try—we have cut the price \$1.50. They can build a POOR vulcanizer to sell at a cheap price, but they can't build a GOOD Patent Pending vulcanizer to sell at a You are Jobbers and Dealers! Here's your the gainer from our chance to tie to a big, quick seller, action, Mr. Motorist.

At \$3.50 this wonder-

ful steam vulcanizer is the biggest value offered in the automobile field today. Pays for itself over and over again in one season. A complete outfit, including scissors, measure, repair gum and tube stock, comes with

# Positive Portable Steam Tire Vulcanizer

Mends any ragged or clean-cut hole in tube or casing, up to 21/2 inches, in one 20-minute setting. Larger holes require another setting. It's portable and automatic and simple in operation. Absolutely guaranteed NOT to burn the tire. Vulcanizes by steam-the only scientific vulcanizing agent. Uses either gasoline, kerosene or alcohol for fuel.

### Sold Under a Money-Back Guarantee

Every vulcanizer we sell carries a broad money-back guarantee of afford to be without one. Ask your jobber or dealer or fill out the coupon and we will send full particulars direct.

### POSITIVE SUPPLY COMPANY

446 Rock Island St.

Davenport, Iowa

### Mail This Money-Saving Coupon

POSITIVE SUPPLY CO., 446 Rock Island St., Davenport, Iowa	(22)
Please send me full particulars regarding STEAM Tire Vulcanizer.	your Positive Portable
Name	
Address	
My Dealer's Name is	



# Twice Around the World

UR 1914 output of 50,000 cars, if placed but a mile apart, would reach twice around the world.

If placed end to end they would cover a distance of 720,000 feet which would make an unbroken string of Overlands from New York City to Springfield, Mass.

Some cars!

And the point we wish to hammer home is the economy of producing cars in such vast quantities.

Every time our production goes up our price comes down.

That is why we are selling more cars of this type than any other manufacturer in the world.

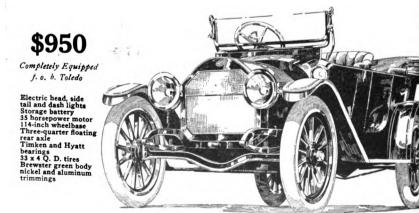
It is certain that if we did not give more value we could not sell more cars, and the sooner you find this out the quicker you can save yourself considerable money.

The 1914 Overland costs you 30% less than any other similar car made.

Full information on request. Please address Dept. 50.

### The Willys-Overland Company, Toledo, Ohio

Manufacturers of the famous, Overland Delivery Wagons, Garford and Willys-Utility Trucks. Full information on request.



\$1075

With electric starter and generator, f. o. b. Toledo

Deep upholstery
Mohair top, curtains
and boot
Cowl dash
Clear-vision, rainvision windshield
Stewart speedometer
Electric horn
Flush U doors with
concealed hinges

Vol. XXXVIII

New York, U. S. A., Thursday, March 19, 1914

No. 13

### LONG TURNS TABLES; AIMS A PATENT SUIT AT KLAXON

Gets Patent March 7 and Files Suit
March 14—Situation Still More Involved—Klaxon Denies That
It Infringes.

One more knot was added to the tangle in the horn situation this week when the H. W. Johns-Manville Co., marketer of Long horns, brought suit in the United States District Court in Brooklyn against the Martin-Evans Supply Co., a Klaxon dealer; it is charged that the Klaxon hand horn, made by the Lovell-McConnell Mfg. Co., Newark, infringes patent No. 1,090,080, which was granted only March 10, just one week before the infringement suit was filed.

This patent covers a heavy flywheel in a horn which continues to rotate by momentum after the hand thrust and causes a continuation of the sound; the wheel used is nearly ½ inch thick. The Klaxon company denies infringement. claiming its hand horn sounds only so long as the lever is being operated.

In the papers in the suit it is charged that the Klaxon company, whose hand horn followed the Long on the market, obtained prior knowledge of the Long device through interference proceedings in the patent office. It is also charged that the Klaxon company allowed the G. Piel Co.. the maker of the Long horn, to build up a big business unmolested before it interfered.

In suits by Lovell-McConnell against the Garland Automobile Co., the Haynes Automobile Co. and the Jackson Eastern Distributers, New York dealers which sold cars equipped with Sparton horns, the Federal court in New York City this week agreed to suspend an injunction until June 30 on condition that the defendants put up a bond of \$2,000 each to cover any damages that might ac-

crue to the Klaxon company within the three months in case it wins its suits. The injunction was suspended in order that the appeal of the Newtone maker, the Automobile Supply Mfg. Co., Brooklyn, may be first determined. The Newtone was defeated by Klaxon, its patents, 923,048, 923,049 and 923,122 being declared basic.

#### MONARCH TO BUILD LOWEST PRICED "SIX"—SELL AT \$1.250

By way of supplying the growing demand for a low-priced, light-weight six-cylinder car, the Monarch Motor Car Co., Detroit, Mich., of which R. C. Hupp is head, has made public that it will add such a car to its present output of "fours." The new car, besides being the lightest car upon the market, will be the lowest priced of all the "sixes." It will sell for \$1,250 and its weight will be 2,400 pounds complete.

The new Monarch will retain the same general lines as the four-cylinder type, which was brought out last year, the hood being lengthened somewhat and sloping to the front with the radiator underneath and ahead of the motor. The power plant will be a 3½ x 5 unit type and electric starting and lighting will be fitted; the wheelbase is 118 inches and the standard body will accommodate five passengers. The first car will be on the road next week, and it is expected that deliveries will commence in April.

#### USL to Vote on Added Working Capital.

The stockholders of the United States Light & Heating Co. will meet in Portland, Me., April 9, to vote on an issue of \$1,500,000 first mortgage 15-year bonds, which, if issued, will furnish additional working capital for the corporation; also, May 1 the general offices of the company will be removed from New York to the factory at Niagara Falls, N. Y., only a sales and distributing station being maintained in the metropolis. The company makes the USL starting and lighting system.

# SINGER WILL BUILD "SIX" TO SELL AT ABOUT \$2,500

Offices and Temporary Factory Already
Established, Latter in Long Island
City—To Use Motor Developing 93 Horsepower.

Following the bankruptcy proceedings which two weeks ago placed at least a semicolon in the activities of the Palmer & Singer Mfg. Co., Long Island City, N. Y., Charles A. Singer, Sr., the head of that concern, already has incorporated the company which he promised and which will produce a car named for himself. Operations have proceeded to the point, in fact, where it is confidently expected that the first of the new Singer cars will be on view, at least, before the middle of April.

Singer's new company was incorporated under the laws of New York late last week with \$200,000 capital stock. Although the organization is not yet complete, it is practically assured that Singer himself will assume the presidency. Associated with him are his son, Charles A. Singer, Jr., and his son-inlaw, Harold Callisen, the latter having been assistant secretary and treasurer of the old company. A. M. Dean, who acted in the capacity of consulting engineer to the old company, has been retained in the same capacity by the new company.

Quite appropriately the new Singer car is to be a "six." The bore and stroke will be 4 and 5½ inches, respectively, thus giving an S. A. E. rating of 38.4 horsepower, but that this rating is purely nominal is evidenced by the fact that on block tests early this week the motor developed 93 horsepower at 1,900 revolutions per minute. The motor is of the poppet valve type.

The Singer car will sell for less than \$2,500—probably about \$2,475—though

the exact price has not been set as yet. It will be equipped with a four-speed gearset and a dry plate clutch; Timken axles probably will be used, both front and rear, and the wheelbase will be 125 inches.

It is planned eventually to produce the car in a factory in Long Island City. In the meantime, temporary executive offices have been established in the Longacre building, 42d street and Broadway, New York, and negotiations are now in progress for a temporary manufacturing plant to be used until the new home of the company is ready.

Singer, Sr., is very optimistic of the prospects for the new company; he stated to a Motor World man yesterday that already enough bona fide orders have been received to keep the prospective plant in operation for several months to come.

A meeting of the organizers of the company is to be held either late this week or during the first part of next week to elect officers.

#### Porter to Produce Car of His Own.

Finley R. Porter, who has recently resigned as chief engineer and factory manager of the Mercer Automobile Co., Trenton, N. J., with which concern he has been associated for four years, has announced that he expects to have a factory of his own with an annual capacity of approximately 4,000 cars. This will be divided among two models of 300-inch size, which will list at approximately \$2,800 and of which 1,000 will be built, and a small car of 231 cubic inches, to sell at approximately \$1,500, and manufactured in quantities of 3,000 annually. Both of these will be four-cylinder types. For the present, Porter has opened temporary offices at 1790 Broadway. New York City, until complete arrangements have been perfected.

#### Walpole Creditors Get a 4% Payment.

Creditors of the Walpole Tire & Rubber Co., Walpole, Mass., which is being operated by receivers, will shortly divide \$60,000, which was set aside for that purpose this week by the Federal court: about \$700,000 claims will benefit and the dividend will amount to 4 per cent. Any surplus will be set asid for claims yet to be allowed.

#### Kellogg Opens Detroit Office.

The Kellogg Mfg. Co., Rochester, N. Y., has opened a Detroit office. It will be in charge of Charles S. Monson, formerly Western sales manager for Gray & Davis and who has acted in a similar capacity for Edmunds & Jones.

# NO JUNK LICENSE NEEDED BY MOTOR CAR DEALERS

Magistrate Corrigan Throws Test Case
Brought by New York Dealers' Association Out of Court—Styles
Proceedings "Rot."

Holding that the law which requires dealers in junk to obtain a license in order to do business does not apply to those whose business in new products is supplemented by a business in used products which is comparatively small in volume, Magistrate Corrigan, in the 54th street Magistrates' Court in New York City, last week effectually "killed" the somewhat ostentatious attempt of the Bureau of Licenses to compel New York motor car dealers to obtain licenses under the junk dealers law in order to continue to do business in used cars. Magistrate Corrigan dismissed a test case brought before him by the Automobile Dealers' Association of New York without even deigning to write an opinion upon it; he apostrophized the case as "rot."

The case which was thus summarily disposed of, and which has so effectively cleared the atmosphere, dates back about two months. Shortly after Julian Rosenthal took office as the head of the Bureau of Licenses a number of inspectors were sent out to ascertain from dealers in motor cars the extent of their respective businesses in used cars. Subsequently, several dealers were served with notices requiring them to obtain licenses under the law controlling junk dealers provided they wished to continue their used car businesses.

It was then that the Automobile Dealers' Association of New York got into the fight, and as a result C. H. Larsen, of the New York Oldsmobile agency, was haled into court as a test case. In the meantime, the License Bureau had requested the Corporation Counsel to render an opinion upon the question. His opinion, however, did not appear until the case reached Magistrate Corrigan's court.

After listening to the complaint, Magistrate Corrigan promptly dismissed the case as no case at all; he considered it of so little importance, in fact, that he would not render an opinion upon it, even after the Dealers' Association had requested him to do so. The opinion of the Corporation Counsel then was introduced as covering this point. It was a not lengthy opinion, the paretic-

ular clause of interest being as follows: "The circumstance that old cars are taken in exchange as part payment for new cars, and not bought with money. I regard as not of much moment. A more important consideration is the extent of the transactions on the part of the parties described. I assume that the principal part of the business of these dealers is the selling in the ordinary way of first-hand cars and accessories. If this be so, then in my judgment a single, or indeed an occasional, such transaction would not bring the dealers under the clause of the ordinance, and I am disposed to go a step further and say that even though such transactions should in the aggregate be of a more substantial character, yet if they constituted but a minor part of the business, all things considered, and were merely incidental to the main business, they nevertheless would not fall within the clause."

Under the law which the Bureau of Licenses proposed to invoke to compel motor car dealers to obtain licenses as junk dealers the license fee is \$25 a year. Whether the decision in this case will affect those dealers who carry on a business in used cars exclusively has not been established as yet. However, several such dealers already have obtained junk dealers' licenses.

#### Gasolock Begins Infringement Suits.

The Headlight Support Co., Detroit, maker of the Gasolock, has filed suit in the United States District Court in that city against the Esco Mfg. Co., of the same city, charging infringement of patent No. 1,012,105, granted to F. E. Youngst on an application filed July & 1908. The Headlight company claims its patent covers every form of device which employs a lock for controlling the flow of fuel from the tank to the engine. It is stated that many car owners have unknowingly infringed by permitting various devices to be placed on their cars, and the Headlight company asserts its intention of instituting a vigorous campaign in support of its rights.

#### To Consider Westinghouse Merger.

On Wednesday next, 25th inst., directors or the Westinghouse Electric & Mfg. Co., East Pittsburgh. Pa., will meet to consider consolidation with the Westinghouse Machine Co. It is understood that the plan will involve an exchange of the stock of the smaller concern for shares in the large Westinghouse company. The two companies have directors in common and the offices of both in New York are located at 165 Broadway.

# FORD WOULD MAKE FORMER DEALER STOP FORD SALES

Claims New York Garageman Advertised 100 Fords at Cut Rates When He Was no Longer Dealer— Garageman Replies.

The Castleton Motor Car Co. is the regular Ford dealer in Tompkinsville, Staten Island, which lies off New York City proper, but whether the Killian Garage will continue to sell Ford cars is a matter which the future will determine. The garage was at one time a dealer along with the Castleton company, but its contract was not renewed last October and lately the Ford Motor Co. has been busy in the Supreme Court for New York county in an effort to enjoin the Killian organization from advertising Fords.

The Killians are John D. and William O. and they and the Killian Garage are defendants in the suit. They have agreed not to advertise that they are a Ford dealer but decline to quit selling Fords if they can get them to sell, and there the matter stands.

Last year both the Killian and Castleton organizations sold Fords in the same territory, an arrangement which is in effect in several Ford territories; but when the contracts ran out October 1, 1913, that with Killian was not renewed. He, however, it is charged, advertised that he had contracted for 100 Ford cars and would sell them at a discount of about \$40; he would not admit that this was done to embarrass his one-time competitor, but asserted that it was his right, and good business.

The Castleton company complained that the Killian advertising was hurting its business, inasmuch as the Castleton company has held to the list price, and the suit followed. The fixing of retail prices is forbidden by law, according to its latest interpretations, and Killian cannot be enjoined on this point. If he can scare up Fords from unknown quarters and sell them at any prices that please him there seems nothing to prevent him, but the Ford Motor Co. wishes it understood that there is but one accredited dealer on Staten Island.

#### Aluminum Casting's Offices in Detroit.

The offices of the general manager and purchasing agent of the Aluminum Castings Co., Cleveland, O., have been removed to Detroit, though the general offices, including those of the president,

vice-president, treasurer and comptroller remain in Cleveland. The latter have not been removed to Detroit, as inadvertently was stated in Motor World

last week.

#### George Westinghouse Passes Away.

After an eventful career in which he made his name well known all over the civilized world, George Westinghouse died at his residence, Central Park West, New York City, on Thursday last, 12th inst.; heart disease caused his death. He was 67 years old. Westinghouse's greatest achievement, and the one that gave to his name its greatest prominence, was his perfection of the air brake system that now is so universally known and used.

Latterly, he turned his inventive faculties toward the automobile field and comparatively recently brought to perfection his air springs for pleasure and commercial vehicles, and the electric lighting and engine starting system that bears his name. In addition to being president and director of the Westinghouse Air Brake Co., Westinghouse was intimately connected with the following industries: Westinghouse Machine Co., Nernst Lamp Co., the Union Switch & Signal Co., Societe Anonyme Westinghouse, Paris, Cooper Hewitt Electric Co., Pittsburgh Meter Co., Societe Italiane Westinghouse, Italy, The East Pittsburgh Improvement Co., The Westinghouse Brake Co., Ltd., London, Westinghouse Cooper Hewitt Co., London, Westinghouse Friction Draft Gear Co., Westinghouse Metal Filament Lamp Co., Ltd., London; Westinghouse Electric Co., Ltd., London, Westinghouse Elec. & Mfg. Co., The Traction & Power Securities Co., Westinghouse Metallfaden Gluhlampenfabrik, Vienna.

#### Cutler-Hammer Gets Vulcan Shifter.

The manufacture and marketing of the Vulcan electric gearshift, which heretoforc has been carried on by the Vulcan Motor Devices Co., Philadelphia, Pa., has been taken over by the Cutler-Hammer Mfg. Co., Milwaukee, Wis., which hereafter is to be the exclusive licensee under the Vulcan patents, Nos. 925,270, June 15, 1909; 930,029, August 3, 1909, and others. A new department of the Cutler Hammer company, to be known as the Vulcan Electric Gear Shift Dept., has been established to handle this branch of the business. Both Roger W. Griswold, president of the Vulcan Motor Devices Co., and Chief Engineer W. A. McCarrell, will continue to be actively interested in the manufacture and sale of the device.

# INVOLVED SALE AND TRADE END BADLY FOR RETAILER

Customer to Get \$400 Discout if He Sold a New Car—Stearns Man Sues Claiming Buyer Got but Never Earned Money.

The contract and trade under which Max M. Hart, New York City, bought a Stearns-Knight car last June of the F. B. Stearns Co. of New York has developed angles which the Stearns branch is unable to untangle; according to its own story, the Stearns company is out \$400 and has no immediate prospect of getting it. It got hold of the car a few days ago, but lost it again this week.

When Hart bought a 5-passenger "four" last June he was to pay \$1,400 and turn in his 1912 Stearns-Knight, with the added agreement that should he make a sale of a new car for the company inside of 90 days he was to get a rebate of \$400. He took the new car, turned in his old car, paid \$1,000 cash and the Stearns manager, W. Arthur Lesser, waited for Hart to turn up a customer for a new car. He claims he waited the 90 days with no result and then demanded the unpaid \$400.

He also claims he did repair work for Hart to the extent of \$19.15 which was not paid; then, February 25 last, the car was turned in for further repairs, and when the chauffeur called for it Lesser refused to let it go out until the full bill was paid. He claims the registration records of a recent date showed Hart to be the owner of the car, but when the car was held up Mrs. Hart, claiming to be the owner of the vehicle, instituted a replevin action and secured possession of the car. But-when the sheriff appeared on the scene it was Hart and not Mrs. Hart who drove away with the sheriff and put the car in the Alhambra Garage, 65 West 118th street.

March 3, Lesser had the car rebonded and turned over to himself, but 10 days later Mrs. Hart went into court and against secured possession of it. Then Lesser instituted suit this week in the Supreme Court for New York county against Hart for the \$400 he never paid on the old deal and the \$19.15 repair bill. He states in his papers, however, that numerous judgments are on file against Hart and that he regards the collection of his account as dubious. He charges that the transfer of the car by Hart to his wife was fraudlent, and asks relief from the court.

# EXPORT OF CARS GAINS IN FIRST MONTH OF NEW YEAR

January's Shipments Greater Than Year Ago—Average Value of Cars Decreases—Tires and Engines Lose—Parts Gain.

Having closed the year with a gain, the automobile export business continued to gain in the first month of 1914; in January there were 369 more cars exported than in the first month of 1913 and the value was greater by \$14.809. This is an increase of 6 per cent. in number and less than 1 per cent. in value.

The average value of the pleasure cars shipped abroad in January of this year was \$876, a drop of \$115, or 12 per cent., from the \$991 average of January, 1913. Trucks in January of this year averaged \$1,655 and in the first month of 1913, \$2,095, a decrease of \$440, or 21 per cent. The exports of commercial cars decreased 42 in number and \$107,780 in value, while pleasure car shipments gained 411, or 20 per cent. and \$122,586, or 6 per cent.

The gain in the total, however, was not achieved without heavy losses in certain parts of the world. Canada and South America, which have heretofore been heavy buyers of American cars, decreased their purchases by considerable amounts, the former by 98 cars and \$170,607 and the latter by 306 cars and \$273,000. Mexico, where business is disrupted, entered the loss column.

The gains, however, were large where they existed. The United Kingdom, which once slowed up in its American car buying through fear of an American "invasion," doesn't seem able to get along without the Yankee automobile, and in January of this year bought 656 cars more than it did in the initial month of 1913; also it paid \$597,510 for what it bought. Other Europe increased its purchases 122 cars and \$59.308, and Germany took 67 more cars and spent \$13,824 more with American car builders.

Italy lost and gained. It bought 44 more cars than it did in January, 1913, but paid \$1,897 less for them; this was made possible by a large drop in the average price of the cars this Southern European country is buying. In January, 1913, it paid \$1,784 for each car, but in January, 1914, it paid but \$526. France lost by 10 cars and \$11,739.

Since some of the American manufacturers have established factories outside the United States, the exports of cars to certain countries has fallen off and the outward shipments of engines, too, has been affected. The decrease in the exportation of this commodity was 60 per cent. in number and 23 per cent. in value. The respective losses were 1,020 engines and \$65,398. Tires, also, were less, dropping by \$144,859 in the first month of this year.

Parts, not including engines and tires, increased \$41,363, or 9 per cent. The total of cars, parts, engines and tires was not so great as in January, 1913; at that time it was \$3,226,848, and this year was but \$3,081,989, a loss of \$144.859, or 4 per cent. During the seven months ending with January, 1913, however, the total gained materially; it moved upward from \$17,657,894 to \$19,429,062, an increase of \$1,771,168, or 10 per cent. The figures in detail are shown by the subjoined table.

# JANUARY PROVES A DULL MONTH IN IMPORT TRADE

America's Foreign Purchases Fall off 83 per cent.—But Average Price of Cars is Higher—Parts Imports Increase.

January was a dull month in the automobile import trade; importing has not been on the increase for some months and in January—as compared with the first month of 1913—not one of the foreign car building countries gained in its sales to America. The total shipments fell off by 59 cars, or 83 per cent.. and \$133,935, or 76 per cent. Parts. however, gained \$5,504, or 12 per cent.

France sold 17 fewer cars and received \$33.436 less; Germany made no sales to America at all; Italy lost by 9 cars and \$17.222; the United Kingdom decreased its business by 4 cars and \$9,860; and the rest of the world, which is known as Other Countries for export purposes, made no sales whatever.

In January, 1913, the average value of the foreign cars sold in America was \$2.460, and, although the price is decreasing in the United States, the foreign average was greater for last January, being \$3.396, an advance of \$936, or 38 per cent. The figures in detail follow:

		Janı	IRTY-	<u>-</u> —				
		1913	•	1914				
France	No. 24	Values. \$57,649	No.	Values. \$24,213				
Italy	21	54,735 18,222	÷	1,000				
United Kingdom Other countries	8	25,401 18,682	4	15,541				
Total cars	71	\$174,689	12	\$40.754				
Parts (except tires).		37,688		42,192				
Total cars and parts	71	\$212.377	12	\$82,746				

		Jan	uary-			_					
		1913		1914`		Seven Months Ending Janua					
F	Num	oer Value	Numb			1912		1913	•	1914	
France	73	\$59.245	63		Numb		Numb	er Value	Numb	er Value	
Germany	27	42,659			200	\$180,513	377	\$289,188			
Italy	20	35,660	94	56,483	73	56,563	247	231,035		333,544	
United Kingdom	374		64	33,763	83	58.673	168	150,253		137,710	
Other Europe	53	258,463	1,030	855,973	3,104	2,453,748	1,683	1,268,110		2.805,325	
Canada	468	61,937	175	121,245	466	403,461	726			713,091	
Mexico	35	593,700	370	423,093	1.957	2.475,068		622,542	889	2,659,482	
West Indies and Rermuda		48,619	9	15,109	203	315,235	3,154	3,886,394	1,895	207,457	
SOUTH America	68	68,104	58	50.651	166		193	339,305	124		
British Oceania	351	393,079	145	120,079	907	171,680	255	263,857	334	312,745	
Asia and Other Oceania	403	386,833	174	146,672		1,061,857	1,661	1,842,500	1,348	1,412,340	
Other Countries	193	182,660	193	163,641	2,108	1.918,716	1,869	1,714,328	2,142	1,846,576	
other countries	92	103,118	151	214,668	492	515,099	1,133	1,068,437	1,269	1,251,814	
Total care				214,008	185	179,281	551	546,582	1,335	1,212,967	
Total cars	2,157	\$2,234,077	2,526	22 210 202							
Commercial†	87	182,271	45	\$2,248,883	9,944	\$9,789,894	12.017	\$12,222,531	13,989	\$13.254,854	
a dose inger	2,070	2,051,806		74,491 )			462	872.375	436	714,261	
Parts*		433,936	2,481	2.174,392	9.944	\$9,789,894	11.555	11,350,156	13,553	12,540,593	
		- 400,930	• • • •	475.299 1		2,080,299	•	2,538,608		3,609,488	
Total cars and parts*	2.157	\$2,668,013	2.50			-,000,277		2,330,000	• • • •	0,000	
Engines	1.705	72.000.013	2,520	\$2,724,182	9,944	\$11,870,193	12.017	C14 761 120	13,989	\$16,864,342	
Tires	,	285.316	685	219,918	2,530	330,437		\$14,761,139		682.030	
	• • • •	273.519		137,889		1 274 227	5,536	845,912	1,929	1.882.681	
Total value all products		02.024			• • • •	1,374,337	• • • •	2,050,843	• • • •	1,002,007	
		\$3,226,848		\$3.081,989		£12 547 047				\$19,429.062	
*Does not include engines				, -, -, -, -, -, -, -, -, -, -, -, -, -,		\$13,547,967		\$17,657,894		\$19,429,002	

<sup>\*</sup>Does not include engines and tires. †Not separately stated prior to July 1, 1912.



# In SALESROOM and GARAGE



The Central Garage Co., Nashville, Tenn., has been reorganized as the Central Garage & Sales Co. A building at 124-32 3d avenue north has been leased and the company will stock the Baker electric, both pleasure and commercial. Speedwell cars and trucks, and the Apperson. The officers are: President, Ernest I. Ignatz; vice-president, William Frasch; secretary - treasurer, William Brantly; manager, John A. Wilsdorf. Wilsdorf is a former sales manager for the Marathon Motor Works, and J. W. Baugh, a member of the staff, is a former Marathon man. Ernest Gobel also is interested in the company.

H. W. Mabie and Fred Barnes, Fond du Lac, Wis., and Clement Zingsheim, Shawano, Wis., have purchased the garage and business of the Anderson Motor Car Co., 36 West 2nd street, Fond du Lac; they will continue the business under the style Barnes, Mabie & Zingsheim. The company handles the Paterson, sells supplies and accessories and maintains a motor livery service.

O. D. Tucker IV & Co. has been incorporated at \$10,000 in Little Rock. Ark., and has taken over the tire department of the Little Rock Tent & Awning Co. It will retail and job Racine and Imperial tires. The officers are: President, O. D. Tucker, IV; vice-president, E. G. Wallace; secretary and treasurer, R. V. May.

The Compton Heights Auto & Garage Co., St. Louis, Mo., has been launched by A. A. O'Halloran, a former justice of the peace, William J. Flynn, former assessor, and Police Judge Frank M. Kleiber; the company has secured the Grant agency and plans to open salesrooms near Grand and Lafayette avenues.

W. W. Minnick, an experienced mechanic, and H. A. Elson, a traveling salesman for 15 years, have entered the trade in Cedar Rapids, Ia., under the style Elson & Minnick; they have opened sesalrooms for the Overland at 510 South 3rd street and are remodeling the building to include a garage.

The Rockford Used Automobile Agency has been formed in Rockford, Ill., by C. Arthur Nardvall, C. Frederickson and Charles Hillner; it has located at 710-20 Race street and will work in

conjunction with the Rockford Automobile Dealers' Association, buying and selling used cars.

R. P. Bailey, Des Moines, Ia., has opened the Capital City Auto Supply Co., at 1016 Locust street; Bailey formerly was representative of the Ajax-Grieb line, has been manager of the Des Moines Auto Supply Co. and has been connected with the Studebaker corporation in Detroit.

The Automobile Tire Co., New York City, has opened a branch in Dallas, Tex., at 2032 Commerce street; Robert Clausius, formerly connected with this company's Washington (D. C.) branch, is manager. The Dallas branch will be the company's southwestern distributing point.

Following the entry of Carl Wright into the Toonen & Barlament Garage Co., De Pere, Wis., the name has been changed to Toonen-Barlament-Wright Co. Wright will act as manager of the company, which handles the Ford.

L. A. Lumm, Wilton Junction, Wis., who added a garage to his blacksmith shop some time ago, now plans to discontinue the latter and operate a garage only. He will erect a new building...

Casey & Turtin, Sacramento, Cal., Cole dealers, have dissolved partnership; J. S. Casey has changed the firm name to Cole Motor Co. and will continue the business, which is at 1906 M street.

William C. Murphy and John Cutler, Des Moines, Ia., are about to open a repair-shop at 416 East 2nd street; Murphy was formerly connected with the Ideal Auto Co. in that city.

Walter Erner and Arthur Aggen, Port Washington, Wis., have entered the trade as Erler & Aggen; they have leased garage space and will handle the Buick in Ozaukee county.

The Independent Auto Supply Co., Dallas, Tex., is opening a branch in Corpus Christi; a store, 22 x 48 feet, has been leased in the Muse & Hearn building on Schatzel street.

F. A. Bringer and B. E. Padeskie, formerly employed in the Velie factory at Moline, Ill., have opened a garage in Muscatine, Ia. It is located at 19 East Front street.

T. Rump and W. Kennedy, Vallejo, Cal., plan to open a garage in Martinez, Cal. A building for their occupancy is being erected by Samuel Hoffman, a cigar dealer.

C. A. and J. E. Norberry, Fort Bragg, Cal., have purchased the Lindstrom Garage, on Laurel street; they will operate a repair-shop and motor livery service.

The Rayfield Motor Sales Co. has been formed in Milwaukee, Wis., by Wm. R. Jurack; he will handle the Rayfield cyclecar at 1230 Hadley street.

E. N. Rhine, Oroville, Cal., and F. A. Perry, Chico, Cal., have purchased the Oroville Auto Co.'s Garage and will operate it; Rhine handles the Ford.

The Barton Motor Car Co., Cedar Rapids, Ia., has opened a new electric garage at 616 2d avenue; the company will cater to electric car owners.

Emerson Fellows and Charles Richardson, Clinton, Ia., are about to open a garage on Market street; they will handle the Buick and Hudson.

Thomas McKeon and Fred Wagstaff, Butte, Mont., have opened a tire store and vulcanizing plant in Salt Lake City, at 336 South State street.

Ralph Smith, proprietor of the Anderson Automobile Co., Anderson, Ind., has changed the name to Automobile Sales Co. He stocks the Cole.

Joseph R. and Emmett J. Swisher, of the Swisher Lumber Co., Decatur, Ill., have gone into automobiles; they have taken the Allen agency.

The Cole Spokane Co., Spokane, Wash., has awarded the contract for a new sales and service station; the estimated cost is \$30,000.

Raoul Garcia, Key West, Fla., has sold a half interest in the Island City Garage to W. R. Asche; the name hereafter will be Garcia & Asche.

The Motor Service Co., Moville, Ia., has opened a new fireproof garage, stocked with a full line of accessories and supplies.

Eugene Smith, St. Albans, Vt., has leased the H. F. Reed Garage; he has it for one year with an option of six

Harvey McCrum, Jackson, Mich., has



opened salesrooms for the Reo; he is located at 231 West Washington street.

The George W. Bolton Co., Detroit, Mich., has purchased the business of the Colonial Tire Repair Co. in that city.

Charles M. Clay, Poughkeepsie, N. Y., plans to erect a garage on Washington street; his sons will operate it.

Alba Copsey, Eureka, Cal., has opened a garage on 2d street; he is one of the town's pioneer repairmen.

H. S. Bunting, Monterey, Cal., has taken over the Pacific Grove Garage, Pacific Grove, Cal.

Stanberry Bros., Jackson, Mich., have opened a garage and repairshop in Adrian, Mich.

E. M. Clark, Pike, N. H., has opened salesrooms; he has the Hudson agency. John Hull, Muscatine, Ia., has opened salesrooms; he stocks the Overland.

I-M Adds Milwaukee Service Station.

Adding another link in its chain of 49 service stations in the principal cities throughout the United States and Canada, the H. W. Johns-Manville Co. just has opened a new branch at 9 Second street, Milwaukee, Wis. In addition to serving as a distributing center for Jones speedometers, Long horns, Carter carburetters and other J-M accessories, the branch will be equipped for the care and repair of the complete line. The main floor is virtually a large garage with accommodations for eight cars at one time.

#### Weed Makes Donnelly a Defendant.

The Donnelly Motor Equipment Co., New York City, has been brought in as a defendant in the suit instituted in the United States District Court in New York against the Walker Tire Chain Co. and Richard F. Ely for handling the Walker grip, which it is charged infringes the Parsons patent, No. 723,299. The Donnelly company exhibited the grip at the New York show. A motion for a preliminary injunction will be heard this week.

#### American Motors Plant Sale March 30.

The plant of the American Motors Co., Indianapolis, Ind., will be offered for sale Monday, 30th inst., at 10 o'clock in the morning. Albert Rabb is the referee in bankruptcy and F. E. Smith the trustee of the estate.

#### Castle Company Adds Two Accounts.

The Fred E. Castle Co., Detroit manufacturers' representative, has added to its accounts those of the Springfield Metal Body Co. and the Detroit Electric Appliance Co.

### 4-MONTH CLAIM LIMIT MAY BE RAISED BY COMMISSION

Carriers and Shippers United in Request That Rule Which Barred Many Claims be Set Aside-To Revive Back Numbers.

Carriers and shippers both having joined in a request to the Interstate Commerce Commission that carriers be relieved from enforcing Paragraph 3 of Section 3, Uniform Bill of Lading, which makes it necessary that claims for loss be presented within four months after delivery, or failure of delivery, the Commission has rendered a report from which it is expected that carriers will waive this provision with respect to all such claims presented prior to December 31st, 1913, and also all claims accruing within two years prior to February 9th, 1914, providing the claims are presented to the carriers on or before April 1st. 1914. General Traffic Manager J. S. Marvin, of the National Automobile Chamber of Commerce states in Circular No. 33, of the General Traffic Department, that members who have had claims declined by carriers because they were not presented within four months are advised to reopen them accordingly, referring to "I. C. C. No. 4844, In the Matter of Bills of Lading, decided February 9th, 1914." Also to see that claims are presented before April 1st for any unsettled matters of this kind; and it is stipulated by the commission that the terms of the Bill of Lading must be rigidly enforced as to claims accruing on shipments since February 9th, 1914.

Paragraph 3, Section 3, Uniform Bill of Lading, which is to be waived as stated, is as follows:

"Claims for loss, damage or delay must be made in writing to the carrier at the point of delivery or at the point of origin within four months after delivery, then within four months after a reasonable time for delivery has elapsed. Unless claims are so made, the carrier shall not be liable."

#### Corbin Branch in New Home.

The New York branch of the Corbin-Brown speedometer has been removed from 1860 Broadway to the corner of Broadway and 63rd street.

Philp Visiting Pacific Coast Dealers.

Sales Manager Arthur I. Philp, of the Studebaker Corporation, Detroit, is now upon a prolonged trip of inspection and

visitation to the Studebaker dealers on the Pacific Coast. He left the factory on February 1st and probably will not return until the end of March.

#### Batavia Declares an Extra Dividend

In addition to the regular dividend of 11/2 per cent. on its preferred stock, the Batavia Rubber Co., Batavia, N. Y., has declared on the common stock a regular quarterly dividend of 1 per cent, and an extra dividend of 34 of 1 per cent. The dividends are payable April 1st.

#### Koehler Adds to Foreign Agents.

By way of extending its foreign agency connections for the distribution of the Koehler one-ton truck, the H. J. Koehler Sporting Goods Co. has appointed Jorge Newbery its Buenos Ayres representative, and M. J. Freeman its representative in Havana.

#### Seidel Gets à Civic Office.

George E. Seidel, president of the Pilot Car Co., Richmond, Ind., and the Seidel Buggy Co., was elected last week to the presidency of the Richmond Commercial Club. Prior to his election, Seidel had served several terms as director in that organization.

#### Electric Storage Battery Dividend.

The board of directors of the Electric Storage Battery Co., Philadelphia, has declared a dividend of 1 per cent from the net earnings of the company on both common and preferred stocks. The dividend is payable April 1st.

#### New Home for McGraw Rubber.

The McGraw Tire & Rubber Co. which heretofore has occupied premises at 1664 Broadway, New York, has leased the store and basement formerly occupied by the American Locomotive Co. at 1886 Broadway.

New Process Gear Plans Expansion. By way of providing for much needed expansion, the New Process Gear Corporation. Syracuse, N. Y., is erecting 8 new three-story, 40 x 100 feet, concrete and steel building.

Kelly Visiting Republic Coast Branches J. H. Kelly, second vice-president and sales manager of the Republic Rubber Co., of Youngstown, O., is visiting branches and agents on the Coast.

Gray & Davis Dividend Declared Gray & Davis, Inc., has declared & quarterly dividend of 134 per cent on the preferred stock of the company. It is payable April 1st.

# FORD GETS RIGHT TO FIX PRICE OF CAR IN ENGLAND

Court Orders Price-Cutting Dealer to
Pay Damages—Judicial Attitude
Opposite of That in the
United States.

Fixing the price at which a dealer may sell a car is illegal in the United States, but it may be done in England; the Ford Motor Co. this week won in an action brought against a price-cutting dealer and was awarded the right to say what its cars should be sold for in that country.

The Ford Motor Co. sued J. O. Armstrong, a Piccadilly dealer, for \$6,250 penalties for breach of contract; it was charged that whereas the Ford company had specified \$750 as the price at which its cars should be retailed, Armstrong had given a lesser rate to members of the British Motor Owners' Combination, an organization with a large membership and buying powers.

In stating its case the counsel for the Ford company outlined the company's policy in England, stating that the country is divided into 1,000 districts in which each dealer has exclusive rights; if, it was added, cars were sold at less than list the company would be seriously damaged. It was alleged that Armstrong had been induced by the big corporation to commit a breach of agreement. Judgment for the penalty was awarded.

#### Carbon Brushes Coming from Toledo.

For the purpose of producing carbon brushes, such as are used in motor car electric lighting generators and starting motors, the Howard Carbon Co. has been formed in Toledo, O., with \$50,000 capital. Among the incorporators are the following: Frank W. Caughlin, H. W. Isenberg and Fred G. Zink. It is stated that the company already has secured ground for a large factory, although just where the plant will be put up has not been made public.

#### Goodyear Prepares to Leave New York.

By way of concentrating service and sales departments and thereby reducing overhead, the Goodyear Tire & Rubber Co. is preparing to vacate the premises at 1972 Broadway, New York City, to occupy a new building in the rapidly growing automobile colony in Long Island City. The building, which is to be located at Honeywell street and Jack-

son avenue, will be of concrete and steel, six stories and basement, and have a frontage of 270 feet. It is expected that it will be ready for occupancy sometime during May.

Veterans Form Distributing Company.

For the purpose of distributing Briscoe, Lewis and Premier cars in the Metropolitan area, the firm of Partrtidge, Clark & Kerrigan has opened up in New York City with offices and a service building at 239 West 56th street. E. S. Partridge, who long has been prominent in the motor car business, formerly as an importer, is president: J. A. Clark, who is vice-president, was for nine years sales manager for Peerless. J. J. Kerrigan, secretary of the company, is new to the motor car business.

#### Automobile Board of Trade Dissolved.

The Automobile Board of Trade. which succeeded the Association of Licensed Automobile Manufacturers and was, in turn, merged with the National Association of Automobile Manufacturers in the present National Automobile Chamber of Commerce, is to be dissolved, as it no longer has any usefulness; an order of dissolution was made this week in the Supreme Court for New York county, which practically ends the matter.

#### Nicholson a U. S. Rubber Director.

At the annual meeting of the United States Rubber Co., Samuel M. Nicholson, president of the Nicholson File Co. and the Providence Screw Co., Providence, R. I., was elected a director to succeed E. C. Benedict, who retires from the board. At the same time, the number of directors was officially reduced from 21 to 20, thus making it unnecessary to fill the vacancy caused by the death of J. Howard Ford.

#### D. B. Smith Joins Silent Majority.

Dave B. Smith, who was well-known and well-liked by a large circle of friends and business acquaintances in the bicycle and automobile sundries field, died suddenly at his home in Stoneham, Mass., Friday, the 6th inst. Mr. Smith represented The Standard Co., Torrington, Conn., and the Splitdorf Electrical Co., Newark, N. J.

#### Boyer to Handle Muir Carburetter.

F. H. Berger, formerly chief engineer of the Oakland Motor Car Co., Pontiac, Mich., has opened a sales office in the Dime Savings Bank Building, Detroit. He will market the product of the Muir Carburetter Co., Baltimore, Md.

# LOCAL LICENSING OF CAR PLAN OF NEW YORK BILLS

Proposed Measures Would Provide \$2
Registration Fee—Recommended by
New York's Members of SevenState Committee.

All chance for unanimous action upon the uniform law to control motor vehicle traffic, which was drafted by the Unifrom Motor Vehicle Legislation Committee, as told in Motor World, February 26th, having faded away, that part of the commission's work virtually has been interred. Instead, there was introduced in the legislature on Monday, by Senator Loren H. White, two bills representing the findings and recommendations of the New York representatives of the committee. These bills already have passed their third reading and it is likely, will be reported out of the Committee on Rules some time this week, and, if passed by the legislature, it then remains only for Governor Glynn to approve them to make them into law.

The two bills which have been introduced are virtually amendments to the highway law, the first of which is based on the common law of the road. The second would wipe out the Callan law and provide for taxation of motor vehicles by local communities instead of by the State, a single fee of \$2 for registration by the State being charged.

In the bill pertaining particularly to motor vehicles, the driving of a car by an intoxicated person is prohibited, among other things, and there is a general provision to the effect that violation of the act shall be a misdemeanor punishable by a fine up to \$500, or one year in prison, or both.

The commission itself represents New York, New Jersey, Connecticut, Massachusetts, Pennsylvania, Maine, Maryland and Delaware. The New York representatives on the commission are Samuel W. Taylor, chairman; Fay C. Parsons and A. J. Deer, the latter the president of the State Automobile Association.

The other members of the commission are as follows:

New Jersey: Job H. Lippincott, Motor Vehicle Commissioner; Col. Edwin A. Stevens, Highway Commissioner, and Geo. L. Burton. Connecticut: Albert Phillips. Secretary of State; Alfred H. Terry, and Charles J. Bennet, Highway Commissioner. Massachusetts: Col. Wm. D. Sohier.. Chairman of the Highway

Commission. Pennsylvania: E. M. Bigelow, Highway Commissioner, and Robt. P. Hooper, president of the Pennsylvania Motor Federation. Maryland: Dr. H. M. Rowe, president of the Automobile Club of Maryland; H. M. Luzius, its secretary, and Harry A. Roe, Highway Commissioner. Delaware: Judge Slyvester D. Townsend, Jr., and Charles S. Guyer. Maine: Scott Wilson, Attorney General; Lyman H. Nelson, and J. C. Seates.

#### Youngstown May or May Not Get Mora.

Despite the rumors that the plant of the Mora Power Wagon Co. is to be bought by Youngstown, O., men and moved to that city from Cleveland, O., S. H. Mora, from whom the company derives its name, states that he has no knowledge of such a transaction; the company was thrown into bankruptcy the last week of 1913 upon the petition of its treasurer, Frank H. Adams, who also was made receiver. Mora, however. filed a counter petition alleging error in service of legal papers and succeeded in having Adams removed as receiver and himself placed in charge of the property. He is still in charge, but states that the situation is very unsettled as regards the company's future.

#### Durkee Drops Suit Against Pyrene.

An action instituted last fall in the United States District Court in New York City by Joseph W. Durkee against the Pyrene Mfg. Co. for \$11,288.10 was discontinued this week; Durkee had been a distributer of Pyrene fire extinguishers in a restricted territory and with practically unlimited marine rights, but claimed his territory had been invaded and a percentage clause of the contract not carried out. Previously a patent suit had been brought against Durkee by Pyrene, but was discontinued.

#### New Homes for Two J-M Branches.

Branches of the H. W. Johns-Manville Co. in Indianapolis, Ind., and Louisville, Ky., have been moved into new quarters to provide larger showrooms and more ample warehouse accommodations; the Indianapolis branch now is at 408-10 North Capitol avenue, and that in Louisville at 659-61 South 4th avenue.

#### Snow Collapses Two Garages.

Two New Jersey garages collapsed under the weight of the recent snowfall Fred Bailey's garage. Union avenue, Massaquan, fell, causing a loss of \$5,000, and the Elberon Garage, Long Branch, owned by William Meyers, collapsed, the damage amounting to \$1,500.

# PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few of Them Leave the Industry.

H. A. Price, who for several years has been in charge of the Atlanta (Ga.) branch of the B. F. Goodrich Co., Akron, O., has been appointed manager of that firm's Cleveland branch.

The Standard Motor Truck Co., of Detroit, has appointed B. M. Beedon traveling representative. Formerly he was connected with the Firestone Tire & Rubber Co. and latterly with the American Voiturette Co.

Lee Olwell, formerly advertising manager for the National Cash Register Co., Dayton, O., has been made Commercial Manager of the Chalmers Motor Co., Detroit, Mich. He will make a trip to Europe before assuming his new duties.

A. S. Hetzell has been made manager of the factory branch and service station which the Knight Tire & Rubber Co., Canton, O., has just opened at 1917 Euclid avenue, Cleveland. Formerly he was connected with the Diamond branch in the same city.

E. H. Delling has been made chief engineer and designer of the Mercer Automobile Co., of Trenton, N. J. He takes the place of Finley R. Porter, who has resigned. Delling has been connected with the Mercer company for the past two years in the capacity of assistant engineer.

W. C. Knight, formerly manager of the Warner Instrument Co. in Cincinnati and Indianapolis and for the past year with the Stewart-Warner Corp., Detroit, has been appointed Western sales manager for the Boston Auto Gage Co., Boston, Mass. He has opened an office at 1231 Woodward avenue, Detroit.

After having been in charge of the Studebaker interests in the Inter-Mountain territory for more than 20 years, Charles A. Quigley has resigned as manager of the Salt Lake City (Utah) branch of that company. He has secured a distributing contract for the Studebaker line for the entire region.

A. E. Fisher has been given the post of Philadelphia district manager of the Chase Motor Truck Co., Syracuse, N. Y., to replace E. F. Howell, resigned. Fisler's territory includes Eastern Pennsylvania, Southern New Jersey, Delaware, Maryland, District of Columbia and part of Virginia. Formerly he was associated with the Swinehart Tire company's local branch.

Charles E. Stahl has been appointed sales manager of the Connecticut Telephone & Electrical Co., Meriden, Conn. He takes the place of Charles Rubel, who has resigned to go into business for himself.

Fred W. Warner, who for several years has been manager of the Buick Motor Co.'s Chicago branch, has resigned that position. His future plans have not yet been announced.

#### Minor Business Troubles.

Notice of dissolution has been filed by the Williams Engine & Clutch Co., Beloit, Wis. C. H. Morse, Jr., was president and the principal stockholder.

Frank M. McKey has been appointed receiver for the Allied Motors Corporation. Chicago; it was formerly the Armac Motor Co., 1427 Carroll avenue.

A petition in bankruptcy has been filed against the Pilgrim Garage & Auto Co. Boston, Mass. The four petitioning creditors have claims aggregating \$1,229.

The South Bend Auto & Garage Co., South Bend, Ind., has filed a notice of dissolution.

The City Taxicab Co., Hagerstown, Md., has been placed in the hands of receivers; the receivership, however. is partly in the way of a reorganization, as it is planned to transfer the business and equipment to William D. Staley and the receivership was chosen as a means of cancelling all obligations.

#### Recent Losses by Fire.

Central City, Ia.—Hatch & Fish; garage destroyed. Loss not stated.

'Chicago, Ill.—F. M. Fender. 330-32 West 63rd street; garage and 14 cars destroyed. Loss, \$50,000.

Monessen, Pa.—S. X. Ely; Monessen Garage; garage and fifteen cars destroyed. Loss, \$21,500.

Wilmington, N. C.—Charles S. Burnett, 2nd street; garage and six cars destroyed. Loss, \$8,000.

Catasauqua, Pa.—Catasauqua Motor Co.; building and five new cars destroyed. Loss, \$40,000.

Gloucester, Mass.—Walter Cresty. Stage Fort Heights; garage and three cars destroyed. Loss, \$15,000.

Toledo, O.—Roberts-Toledo Auto Co. Madison avenue and 11th street; vulcanizer explosion. Loss not stated.



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#### Show Value

Any motor show held by a dealers' organization is as valuable to the exhibitors as they want to make it. It is solely up to the different dealers what they make out of it. One dealer gets prospects from a show and another gets disappointment. Few dealers get 50 per cent. of the possible selling value that a show offers. Take a show where 5,000 visitors pay their 50 cents each on a single day to go to see the new cars, this figure not including the other 6,000 who may have received complimentary tickets from the car and accessory dealers.

It should be worth real money for any live dealer to get his share of the names and addresses of these 5,000 real visitors, visitors who came to see and get information on cars and not merely to pass a few afternoon or evening hours. The dealer who fails to grasp the fact that these visitors go to learn about the exhibits, the new cars and the new accessories, has not got his finger on the real pulse of the motor industry today. These visitors are real prospects, and while they may not say in so many words that they are or are not buying cars, it is a certainty that they will be in the field a few months hence—perhaps a year or so at the outside.

How do our dealers handling exhibits fail to take advantage to the full of these visitors who have paid real money to get inside the show building?

Their salesmen on the floor very often fail to take proper advantage of these visitors that visit their booths. It is a common sight to see visitors stray into an exhibit space, spend some time examining the cars, and then leave, the passive salesmen being more engrossed in a little conversation among themselves

than in getting real names and addresses for their company. This is not an example taken from one stand, but it is an example that could be taken from the majority of stands during many of the recent minor shows.

Frankly speaking, the salesmen are not on their jobs. They are not operating on a 100 per cent. efficiency, but at little over 50 per cent. They apparently fail to realize the fact that everybody coming into an exhibit space and looking over the cars, critically or otherwise, is interested and is, perhaps, one of those that have paid real money to get inside. The least salesmen should do would be to see that every visitor is given attention, spoken to, and perhaps offered literature.

#### Tell the Same Story

The Boston show which is holding the boards in The Hub City this week, offered a good example of the necessity of having all salesmen in the same exhibit giving at least the same arguments on the pros and cons of the car and its parts which are being exhibited. The question was asked as to the value of wire wheels and their advantages or disadvantages as compared with wood wheels. One salesman declared that wire wheels were more resilient than wood, going so far as to state that when a wire wheel strikes a stone on the road you can see the wire spokes spring so as to give greater elasticity. It was a case of your being able to actually see it with your naked eye.

The other salesman had the real arguments at hand. He knew his subject. He started off with the wire wheel being better and giving longer tire mileage because the wire spokes radiate the heat of the tire away, so cooling the tire and naturally adding to its wearing qualities. When asked why this was better done in the wire wheel than in the wood wheel, the salesman told how the wood felloe is an insulator of heat, and instead of conducting the heat out of the tire it served to keep all of the heat in the tire, thereby raising the tire temperature and tending to undo the vulcanizing process and so cut away from the useful life of the tire.

Here were good and bad salesmanship right in the same exhibit booth. It is certain that the head of the exhibit had not schooled his salesmen in the real arguments of the wire wheel vs. the wood wheel. While these counter arguments were met with in the show, they are being met with in salesrooms nearly every day. The different salesmen do not have the correct arguments, they do not have the correct facts. Let the head of the salesroom see to it that all of his force have the real arguments and that a prospect will not be given one reason for wire wheels today-perhaps an absurd, untrue reason-and will have to call tomorrow or the next day, when he may chance to meet the real salesman before he can get the correct argument. Start a little kindergarten with your force of salesmen. Be sure that they all know the real, true arguments.

# TO TEST TIRE WEAR WITH WIRE AND WOODEN WHEELS

A. C. A. Undertakes, at Tire Maker's

Expense, to Determine Relative

Merits of Wheels—Outline of

Test Conditions.

Unless something goes amiss, there shortly will be available accurate data regarding the respective merits of wood and wire wheels, at least insofar as their effect upon tire wear is concerned. By way of settling this most question for all time, the Pennsylvania Rubber Co., Jeannette, Pa., has arranged, at its own expense, to have the Testing Laboratory of the Automobile Club of America conduct an official test to determine the relative wear upon two sets of its Vacuum Cup tires, placed upon wood and wire wheels, respectively.

For the purpose, two cars will be used, one a four-cylinder 1914 Lozier, equipped with the wood wheels regularly furnished by the maker, and the second a duplicate, equipped with wire wheels of well-known construction—probably the Rudge-Whitworth type.

The test will cover several weeks, during which time the cars will be driven an average of 125 miles a day. Each car is to be continually in charge of an official observer and will report at the club each night be locked up.

The order of conducting the test will be that one car will lead one day with the other car following over exactly the same route at the same speed. The next day the positions of the cars will be reversed; similarly, the drivers will "swap" cars. On some of the trips the cars will carry a full complement of passengers, or the equivalent in ballast. The number of passengers carried, however, will be changed from time to time, in order to approximate as nearly as possible the actual conditions under which the average car is operated in normal use.

The tires on the rear wheels will be interchanged with those on the front wheels after they have covered approximately one-half of the total mileage they are expected to run. Careful note will be made of the distance run by each tire and at the conclusion of the test the A. C. A. Testing Laboratory will issue a report covering it in detail.

#### Would Provide "State Traffic Dept."

If Senator Griffin has his way, the Callan law will be wiped clean off the slate and the control of motor vehicles will



March 17-21, Boston, Mass.—Boston Commercial Motor Vehicle Association's 12th annual commercial vehicle show in Mechanics' Building.

March 21-28, St. John, N. B.—New Brunswick Automobile Association's Maritime show at the Armoury.

March 27-28, Racine, Wis.—Racine Automobile & Motorcycle Association's show in Lakeside Auditorium.

April 19-29, France—Coupe de Tourisme, cyclecar and light car endurance contest.

May 25-26, Sicily—Automobile Club of Italy and Automobile Club of Sicily's Florio Cup race around Island of Sicily.

May 30, Indianapolis, Ind.—Annual International 500-mile Sweepstakes race on the Speedway.

June 1, Sicily—Automobile Club of Italy and Automobile Club of Sicily's Florio Cup race around Island of Sicily. June 10-11, Isle of Man—Royal Automobile Club's tourist trophy race.

June 23-26, Cape May, N. J.—Society of Automobile Engineers' annual summer meeting at Cape May Hotel.

July 4, Lyons, France—Automobile Club of France's Grand Prix 4½-liter

July 25-26, Belgium—Royal Automobile Club of Belgium's Belgian Grand Prize 2½- and 4-liter race.

Aug. 2-9, Grenoble—Automobile Club of France's six-day motorcycle and cyclecar reliability contest in French Alps.

Aug. first fortnight, Auvergne, France

L'Auto's Coupe de L'Auto 2½-liter

Aug. 16, Le Mans, France—Automobile Club de la Sarthe's Coupe Internationale light car race, 1 liter, 400 maximum cylinder area and 350 to 500 kilos weight.

Aug. 17, Le Mans, France—Automobile Club de la Sarthe's Grand Prize de France for 4½-liter cars.

Aug. 28-29, Elgin, Ill.—Chicago Automobile Club's Elgin road races.

Sept. 2-7, Brescia, Italy—Automobile Club of Italy's 41/2-liter Grand Prize.

Sept. 10-15, Berlin, Germany—German 4½-liter race.

Sept. 26-Oct. 6, Berlin, Germany-Annual show.

Oct. 1, Paris, France — Automobile Club of France's kerosene motor tests Oct. 16-26, Paris, France—Annual salon.

Nov. 6. London, Eng.-Olympia show.

be vested in a State Traffic Department. Griffin has introduced a bill in the Legislature to create such a department, which is to be headed by a commission of three appointed by the governor for a term of six years at a salary of \$5,000 per year.

The bill repeals the Callan law and establishes registration fees at \$5 for vehicles weighing 1,000 pounds or less, with \$5 for each additional 1,000 pounds. The license fee for chauffeurs is fixed at \$2.

Provision is made in cities of the first class for the appointment by the Mayor of a traffic commissioner, with an annual salary of \$5,000. When authorized by the State Traffic Commission cities of the second and third class may also have traffic commissioners.

Lights Now Required on All Vehicles.

Senator Wilson's measure, which provides for lights on all vehicles while on the public highways, passed the legislature of the State of New York during the present session and, having received the approval of the governor, has become a law. The section is designated

by the number 329-a and is in effect an addition to the existing highway law. Under the provisions of the measure, all types of horse-drawn vehicles, with the exception of hay wagons, are required to carry lights after nightfall. The general exception to such measures, which makes it unnecessary for lights of the kind in large cities where street lamps are spaced not more than 500 feet apart. obtains.

Minneapolis Sees "Cooperative Store." Minneapolis (Wis.) is to have a little "cooperative supply store" all its own M. J. and L. S. Rosenstein, of the Cleveland Wrecking & Contracting Co., A W. Juster and Lewis Rosenthal have formed the company that will exploit it, and L. S. Rosenstein is quoted as having said: "We shall sell tires at wholesale prices to consumers, and all we shall do is to charge them \$5 each for membership; we are arranging for accessories." The company is to be known as the Tire Supply Association and already has acquired a location at 1406 Hennepin avenue. The authorized capital of the company is \$50,000.

### TRAINS SALESMEN TO GET KIND THAT SUITS

# Maguire of Boston Teaches Young Men to Sell Pierce-Arrows in the Maguire Way—How the Plan Works Out.

When J. W. Maguire opened up in Boston in 1903 as a dealer in Pierce-Arrow cars the salesman problem worried him not at all. A 2¾-horsepower speed demon was his demonstrator and Maguire was his own salesman, demonstrating driver and sales outfit all rolled into one.

But today he has three times the store he had in those days and has one of amount of salary can get six men who will suit one dealer. Almost any dealer would rather have six men that suit than six salesmen who cannot work together in harmony and who lose their collective efficiency because of lack of the cooperative spirit.

The sales work is directly under the supervision of Eliot B. Ware, sales manager and general assistant in the J. W.

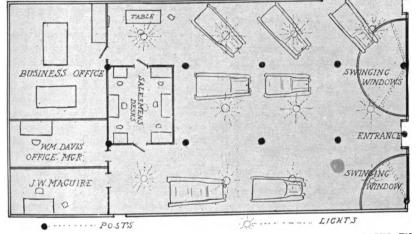
he may be termed—is placed on the floor with the other salesmen; he is first taught the points of the Pierce-Arrow and is given his initial and general instruction in the methods of work.

Gradually he works into the scheme of things; he is permitted to meet prospects as they enter the salesrooms, takes them over the car in which they are interested and at the start enters into the preliminary work of the sale. It is not to be expected that he will be a "closer" the first week; that ordinarily follows later. But the sales plan of the company covers this point by an arrangement whereby an older and more experienced salesman may be summoned to close the sale or render any assistance required by the newer man.



As he works he takes up any mooted points with the sales manager and is free to ask information or advice of his coworkers on the floor; should he meet a situation from which he does not know just how to extricate himself he may summon assistance and have the case explained later. "Summoning assistance" does not consist in wildly waving his arms for help; it is only a clever plan of beckoning to another salesman, introducing him and bringing him into the sale without the prospect knowing it has been done.

One of the difficult knots in sales work



ARRANGEMENT OF MAGUIRE SALESROOM AND CARS—SALESMEN'S DESKS EN-CLOSED BY GATED FENCE

the big and smooth-running dealership organizations in the Hub; he has numerous employes, including a half-dozen salesmen, and while getting the right kind of salesmen puzzled him at the start, he now has them. Getting six men that suit seems impossible to many dealers.

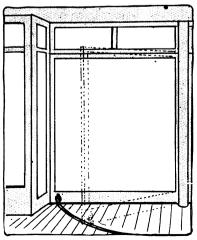
#### Takes Young Men and Trains Them.

It bothered Maguire, too, once upon a time but, as every business man should meet a problem, he took it in hand and worked out a solution. How? He took more or less raw material and trained his own men and the training is still going on today. Occasionally a man drops out, goes to a bigger and better position or leaves for some other reason, in which case another recruit joins the ranks and begins his schooling.

Long and tedious process? Perhaps but the only one. Paying high salaries for the highest priced men will get "good" salesmen, it is true, but no Maguire Co. The salesrooms are at 745 Boylston street. In the training of men the first step, of course, is the selection of the man, for much depends upon this; the better the choice the more successful the outcome. Every man who turns out unsatisfactorily means a direct money loss; he has been paid a salary during the days of his novitiate when he was not a paying investment, the time of the company has been devoted to him in the hope that he would become a valuable employe, and if he does not work out as a member of the Maguire staff the whole investment is a loss.

#### Requirements of the Sales Student.

The man who is sought for is one about 24 or 25 years of age; one who has been in contact with people in one capacity or another, who has the rough edges worn off, who is able to meet customers agreeably and who is amenable to suggestion and possessed of an ability for sales work. This pupil—if such



HOW SHOW WINDOW IS MADE TO OPEN

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is bringing about cooperation or team work in a selling force, and that it has been done in the Maguire establishment makes this organization one of interest to every dealer who has more than one salesman working under his direction. There are many elements which enter into the consummation of this plan, but probably the most important is that the men work on salary and no commission. Who makes the sale is not the essential thing, but the aggregate of sales. The fact that one man stands above the others in number of sales has its bearing. it is true, but so many other points enter into the situation that he does not

the task of attending to many of the future needs of the buyer. This gives the salesman a continued interest in the sale; he is anxious to keep the owner satisfied and to make his sale a satisfactory one. Often the salesman instructs the new owner's chauffeur in the operation of the car; he may dislike the task for fear someone will mistake him himself for a chauffeur but it is a part of the plan and he does it.

#### No Plan in Meeting the Prospect.

Some of the salesmen do floor work and some outside follow-up work, although the number on the floor is al-

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FACTS ABOUT THE PROSPECT ARE RECORDED IN TWO FILES—SALESMAN'S AND MASTER, THE LATTER BEING KEPT BY THE SALES MANAGER

necessarily stand out in proportion above his fellows.

It may happen that one man will run across more prospects than the others, he may be called in more times to help a man who is not so good a closer, he may be given more prospects to follow by the manager than some of the others receive, all of which may make his sales average higher while he may be no better salesman than some other members of the staff. The fact that team work and not individual effort is made the basis of efficiency impels the salesman to work for a sale made for the company and not for a sale made by himself. Very often as many as three salesmen will work on one prospect.

#### Attends to Buyer's Future Needs.

The new salesman demonstrates his own car; this is calculated not only to bring him into close touch with the prospect but to teach him the car by a close hand education that never could be obtained from a catalog; and after the sale the man who made it is given

ways two or three; no fixed rules govern this work and there is no order in which the salesmen shall approach entering prospects. Generally several of them stroll forward to convenient positions and some one of them always meets the visitor.

#### Card System and Its Operation.

The new salesman is given a prospect filing system, consisting of a small one-drawer cabinet containing a set of cards, one of which is reproduced herewith. Most of the items, such as "Name" and "Address," are self-explanatory; the numbers across the top are for the affixing of a little tab or finger clip which sticks up above the cards and indicates the day of the month on which the prospect requires a demonstration or other attention.

"Interest in" is followed by the model of car the prospect seems most likely to buy; "letters" and "catalogs" cover the literature that is mailed out, and "known through" is not only the record of valuable information but provides a check on an over-ambitious salesman. Under this heading goes the name of the man through whom the prospect was secured—if it is secured in that way—and with the proper entry here no salesman can lay claim to having dug the prospect up himself, thereby assuming unearned glory to the detriment of his fellow-workers.

Each salesman makes out two cards for every prospect, one going to Sales Manager Ware's master file; this contains from 1,500 to 1.800 names and is a combination of the files of all the salesmen. "Dead" cards—those for prospects who have slipped away or are regarded as unlikely buyers—are discarded.

#### "Dead" Cards Cast Into Discard.

"There is no use keeping them." said Ware. "No man who loses a sale ever forgets it. If the salesman goes by 80 Mill street, for instance, the mere sight of the house brings back the recollection of how he tried to sell a car to the man who lives there and some day the salesman may make another try at it. He may drop down there once or twice a year and, if the prospect ever evidences a renewed interest in cars the information comes in to the salesman some way or other. With \$5,000 cars it is not so difficult to keep track of the possible buyers even in a town as large as Boston."

Each salesman has a little date book, a page for every day. In this he marks ahead his engagements and suggestions, and it is regarded as more efficient for follow-up purposes than even the prospect file.

#### One Who Failed and the Reason.

With the plan pursued and the care made in choosing men as pupils, the unsatisfactory instances are few; one such. however, but recently departed from the Maguire salesrooms. "I guess he had cold feet," said Ware. "He couldn't stand on his own rights and talk to a prospect. We don't trade at all. We have a separate company that buys the car of any man who wants to trade. That has been our policy since 1907 and it is invariable. For instance, a prospect would come in and say he would not buy if he could not trade; there is but one answer to that question, and we let such a prospect pass by. But this man, while he knows it, couldn't say 'No' He would come back and ask what to say. We told him many times of his failing. but he never was able to overcome it. He had been with us three years, too"

The Maguire establishment is about 50 feet wide and 100 feet deep; spacious and well lighted. Most of the ground

floor is given up to the display of cars, as is illustrated. They are placed in an easy, not angular, arrangement with plenty of space between; at the left of the front is now standing a late limousine model.

The offices of Ware, Maguire and the business department are at the rear; in front of them, in a fenced-in enclosure, are the salesmen's desks. The desks used to be in the open, but so often chauffeurs would walk in, sit on the desks and talk to the salesmen, that the fence was built. It has two swinging gates, but even now some of the chauffeurs get inside and make themselves at home.

A unique arrangement has been effected at the front of the building in that the three 10-foot windows are doors. Including the baseboard and entire framework, they have been hinged and the swinging ends mounted on castors with a little quarter-circle metal track embedded in the floor. Bolts lock the windows when they are shut. By this arrangement the demonstrating car, when clean and presentable, can be kept in the salesroom; also, should it be deemed advisable to run any other car out for the prospect it can be in the street in a few minutes.

#### Stand on Your Own Warranty.

The salesman who sits tight and shows his confidence in his goods and his firm not only wins out but gains the respect and confidence of the other man.

Not long ago a Packard owner dropped into a store where they make and repair radiators. He ordered a new radiator for his car. The price agreed upon was \$50, cash on delivery.

In due time the Packard owner came after the radiator. "Before I pay you and accept this radiator, I want to take it and submit it to the Packard people and get their O. K. on it," he said.

"Did you order that radiator?" said the salesman. "Certainly," was the reply. "Well, then, pay me \$50 and you can have it," said the salesman. "We guarantee that radiator and consider our guarantee equal to that of any factory on earth. If you want the radiator, take it and pay for it on the basis of our guarantee. If you don't want it, say so, and we will put it back in stock. Remember our guarantee stands back of the radiator, and if it does not satisfy you in every way you can bring it back and get every cent you paid for it."

The \$50 was paid and the radiator went out to the purchaser's car without any further discussion. The customer has been back; but only to express himself as thoroughly satisfied.

#### MOTOR WORLD

# BRISCOE'S \$295 ARGO CAR BUILT ON STANDARD LINES

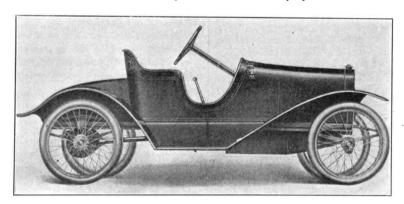
Four-Cylinder Block-Cast Motor of Extreme Simplicity—Final Drive by Shaft and Bevel Gears— Weight, 700 Pounds.

Following the incorporation of the Argo Motor Co., which, as was told in Motor World two weeks ago, was formed for the purpose of manufacturing and marketing Benjamin Briscoe's light car, specifications in detail of the Argo car itself have now become available, and they reveal, among other things, that it is to be an uncommonly good looking little vehicle with constructional features which are truly astonishing in view of the low price

of course, Briscoe design throughout. They will have four vertical cylinders cast in a block and cooled by water under the thermo-siphon system; a honeycomb type radiator will be used; the motor is to be supported at three points in the chassis frame. Bore and stroke are to be 25/16 inches and 4 inches, respectively, giving a nominal rating, according to the A. L. A. M. formula, of 8-12 horsepower. Ignition will be effected by a battery system of the single spark type; lubrication is to be by pump and splash from the crankcase compartments.

The wheelbase of the car is to be 90 inches, and as an instance of the liberality of the designers it is only necessary to point out that the chassis will be supported both front and rear on full elliptic springs. The tread is to be 44 inches.

For control purposes there are two



BRISCOE'S ARGO CAR, WHICH LISTS AT \$295.

which has been put upon the car. It is to sell for \$295.

As already is fairly well known, the car is to be produced simultaneously in the United States and in Briscoe Freres' Billancourt (Paris) factory. An American location has not been decided upon as yet, though it is not unlikely that a factory will be acquired in Newark, N. J. At any rate, the cars are to be assembled at some point that will be within a radius of 50 miles of New York City.

The principal point of difference between the cars that come from the Billancourt factory and those that are made in the United States will be in the transmission mechanism. The French car is to have friction transmission with side chains, whereas the American car will have a cone clutch, two-speed selective gearset and shaft drive through bevel gears in a live axle.

The motors for the American cars are to be produced by the Jaegers Motor Mfg. Co., Racine, Wis., though they are, pedals, one of which operates both the clutch, and the service brakes and the other the emergency brakes, which operate on drums on the rear wheels. Other than these two pedals there is nothing but the steering wheel and the gear shift lever. The wheels will be wire, 28 inches in diameter.

The body is a sightly two-passenger model, as the accompanying illustration makes plain, the passengers being seated side by side. At the back there will be storage space for tools, spare parts, etc., and a limited amount of luggage, and the hood and deep skuttle have been carefully blended to give a pleasing appearance.

The weight of the machine complete is to be 700 pounds. The equipment, which is included in the price, consists of two side lamps, tail lamp, horn and the usual set of tools.

It is expected that the demonstrating model will be ready by May 1st and that deliveries will commence shortly afterward.



### SUCCESS REQUIRES SYSTEM

Necessity for Careful Record Keeping to Avoid Delay and Discontent—Why One System Failed.

Did you ever lose a job ticket? It is enough to make you swear; and besides, it may cost you some money.

A firm in Detroit that does quite a large business in repair work of all kinds and that undoubtedly employs good mechanics, has a job ticket system that somebody sold it a long time ago.

There is a blank printed line for almost everything on the front of an envelope. That is an easy reminder, in case you have forgotten to put down anything. Then there is the ticket on which the original order was made out, which goes with the car and slips inside the envelope when the job is completed. There you have the complete bookkeeping system.

With the ticket and the envelope nothing more can be desired. But, alas! when one does many jobs and has many tickets and is being continually interrupted by people who want to know this or that, he is likely to mislay a ticket or two, perhaps when it is in the envelope ready for billing. Then what? That is exactly the point where the originator of this substitute for bookkeeping stopped his plan. The only chance is to hunt and hunt till you find the ticket and envelope; or, if you are easily discouraged, sit down and write out a new one from memory aided by your clever assistants.

Of course, you may be shy a few hours' time, but what of that? On the other hand, you may get a few hours more. Better be sure than sorry, or so the repairman reasons to himself.

Some day this type of repairman will

awake to the fact that a book that goes into the safe each night is the proper place for his records. Old, soiled job tickets may be all right for first records, but they should be copied and kept in some permanent form.

Moreover, the original order should be entered in some sort of day book or the job envelope, and kept in the safe each night, where it will be preserved clean, fresh and unaltered, ready for checking up against the work ticket.

# CONCENTRATION PREVENTS "BEATING AROUND BUSH"

The most important thing for a salesman to keep in mind when he calls on a prospect is the reason for his call. So many, many men are prone to "beat about the bush." They are perfectly willing to discuss the weather, their family, your family, business in general and any topic but the one you have definitely in mind. All of which makes plain to the experienced salesman that if he wants to make his time count he must dominate the interview. He must guide the prospect's attention to the matters he has in hand and so steer his mind that it will not drift aimlessly among matters not of immediate concern.

#### Unintentional "Wandering" Hurtful.

This habit of wandering away from the main issue is often not intentional, but comes from lack of concentrated attention and well defined plan on the part of the salesman. If he will only keep steadily in mind the prime object of his visit—namely, to sell a car—and then get a firm grip on the rudder, there will not be much drifting.

Despite what may have been said or written to the contrary, people do appreciate the man who is all business. Even the man who cannot concentrate his own mind on the matters before him appreciates the salesman who comes in

and by tact, diplomacy and domination keeps him straight on the course and prevents "wandering."

#### What Businesslike Methods Reflect.

"Isn't it funny how you can judge the head of a business by the way his men do things?" said a well-known dealer. "And did you ever notice how you can judge a man by the way his business office is conducted?

The man who is businesslike, keen, progressive and clean-cut will have a clean office, with proper desks, files and every convenience for the dispatch of business. The employes take their cue from him and their desks are sure to be neat and well-kept. And so it goes, right down to the porter at the door. It's a great thing for everybody, they all beneat by it

#### Well-Kept Office Bolsters Credit.

"And then there's the opposite type, whose methods are slipshod and slovenly. The office is sure to know it. The chances are it will not be clean—and papers will be strewn on top of the desks, bills will not be filed up to date, and if you chance to want a letter you would have to wait a week until the girl had a chance to 'get up' the filing. Put the first man in the same office and without any additional help he would have things right up to the day in a very short time, or else he would know the reason why.

"The minute I step into a dealer's place I glance around and make mental notes of the condition of things; and the story I read is usually true."

Did you ever step into a dealer's salerroom and see piles of printed matter on tables, some of it out of date. some of it dog-eared, much of it dusty and all of it more or less useless? It's only a small detail, to be sure, but what did you think?



### **CAUSING GOOD IMPRESSIONS**

Helpful Opportunities That Follow Clean Windows, Alert Salesmen and Courtesy—How Bad Thoughts Hurt.

"Sow a thought and you get an act," says an eminent writer. It is the idea behind all advertising. It is the idea back in the mind of every merchandizer. From this view point he examines every nook and cranny of his business to see that it presents the right thought to the man whom he hopes will buy his goods.

What sort of thought is aroused in the mind of the man whose car comes to him from your shop greasy and dirty where the repair men have been doing their work? What kind of thought is stimulated by the appearance of three or four salesmen lolling around their desks and smoking cigarettes when the prospect comes in? What kind of act will follow the sharp, snappy answer of the telephone operator, of the salesman, of the proprietor? It must be the logical act that follows the kind of thought aroused. It cannot be anything else.

#### Courtesy the Soul of Business.

Again, what sort of thought is suggested by unclean windows? By dirty floors? By careless bookkeeping? By failure to keep promises?

Or, take the other side of it. What sort of thought is suggested by clean windows? By alert salesmen? By polite, courteous treatment over the telephone, through correspondence? By careful, accurate bookkeeping and prompt billing? By keeping promises and appointments? Can you measure the opportunities that follow in the train of thoughts suggested inevitably by up-

to-date methods, by reliability, by honesty, by all-round square dealing? It pays to think over men, methods and policies from this vantage point.

Plan your work so that every one must remember that courtesy is the soul of business and then proceed to work your plan. It is in this way that small businesses are built into big ones.

# ACTION THAT RESULTS IN COMPELLING ATTENTION

"Who is the livest automobile dealer in this town?"

Have one of your friends ask that of your local merchants and see how they give the answer. They might say it was you; again, they might not. It is just as well to know where one stands, and then if there is a remedy needed it can be applied. Nothing will make a firm stand out like action. It may be action in sales, which is the most profitable action of all; it may be action in window displays that lead to sales; it may be in publicity, but whatever it is, action is sure to be the element that creates opinion and talk.

If one doesn't do anything very little will be said. If one does something there will be those who think it right and those who think otherwise; but at least there will be thought and opinions. It takes action to make people conscious of your existence, even though you may live among them for years. "You never hear of them" is not the sort of idea one likes to have one's firm associated with; but it is inevitable unless pains are taken definitely to attract attention and make people hear about them.

#### Need for a Checking System.

It pays to check the robes and other loose equipment on a car that comes into a garage for regular garaging or for repairs. The proprietor may have a

dozen signs up stating that he is "not responsible for loss or theft of articles left in a car." But that does not relieve him of a real sense of moral obligation toward a good customer.

Two weeks ago a customer left his car in a local garage for repairs. It was a cold day when he drove in and naturally he had a robe. It was a good one that had cost him \$11. When he came to get his car the robe was not where he had left it, though the proprietor of the garage distinctly remembered the robe being in the car when it was brought in. There remained only one thing for him to do, after searching without avail, and that was tell the customer to go and get a new robe and charge it to him.

The repair bill came to \$2.65 and the robe cost the garageman \$11.00. It did not take much argument to make him see the wisdom of adopting a plan by which all loose articles are now checked free in the stockroom and kept under lock and key. It costs a little money to carry out the plan but it is far more satisfactory and he expects it will prove much cheaper in the end than the old slip-shod method.

#### "Slogan Address" Reaches Destination.

"No hill too steep, no sand too deep." Whose slogan is it?

Everyone probably has heard it, but perhaps not everyone could tell offhand just which company coined the phrase. The postal clerks of Des Moines, Ia., however, either know it or spent time enough to find out, for a few days ago a letter so addressed reached its destination.

The address was "No hill too steep, no sand too deep Motor Company, Des Moines, Ia." The carrier delivered it to the Capital City Carriage Co., the Jackson dealer in Des Moines, for which company it was intended. It was mailed in Minneapolis.

### LONDON STREET TRAFFIC RELIEVED BY MOTOR CARS

Speed and Compactness of Motor Cars
Permit Traffic Increase Without
Blockades — Statistics that
Point Lesson.

Street traffic conditions in London and New York differ widely and fundamentally. London streets are narrower than those of New York; the road surfaces are, to a great extent, in the same condition that they were 100 years ago; and the lay-out of the city is such as to make traffic conditions difficult to handle. Further, the London traffic is heavier than that of New York.

Comparisons aside, however, there is this similarity between the traffic conditions of the giant cities—the volume is enormous, and the motor propelled vehicle is a factor of rapidly increasing importance. In the case of the older city nothing but the motor vehicle has made it physically possible for the streets to accommodate the traffic, which not only has increased normally, but has been enormously augmented by a surge of travel back to the highways, which is emphasized by figures given in the report for 1913 of the London traffic branch of the Board of Trade.

#### Speed Minimizes Congestion.

The conditions in London, as revealed by the report, are interesting, and the report itself well may serve as a model by which other boards of trade may pattern their activities along similar lines. The general speeding up of traffic in London, the direct result of the use of motor cars, has made it possible for the streets to accommodate nearly double the number of vehicles that could be accommodated 10 years ago.

It goes without saying that the compactness of the motor vehicle has been a factor in keeping down congestion, as has also the facility with which it can be handled in difficult places. The London report brings out the fact that the motor vehicle is responsible for the almost entire disappearance of the protracted blockades that at one time were so frequent and so troublesome.

The report goes into traffic figures in elaborate detail. It develops that a grand total of 2.035,000,000 journeys are made annually in London, and that of these two-thirds are made over the streets and roads of the city. Deducting 250,000,000 suburban trips on the trunk railroads and

50,000,000 cab trips, the total number of trips made in the Metropolitan district annually is 1,785,000,000.

Of this enormous number no fewer than 551,000,000 trips are made by motor 'bus—a number that bears comparison with the 797,000,000 trips made on the "trams" or street cars, and is a jump ahead of the underground and other electric roads, on which 436,000,000 trips are made annually.

#### Fewer Vehicles, More Passengers.

The influence of the motor 'bus was felt strongly in 1912, when, for the first time, there was a decrease of 20,000,000 in the number of passengers carried by the surface cars. At the same time, the motor 'buses showed an increase of 150,000,000 passengers, and to their keen competition the London County Council attributed the decrease in the surface car traffic.

As far back as 1903 the number of passengers carried by motor 'buses was considerable-287,386,471, to be accurate: but in 1912 the number was nearly double, or 551,622,398. One of the results of the increasing number of motor 'buses is that the total number of 'bus licenses issued-that is, to both horse-drawn and motor 'buses-has decreased. In 1903, 3,626 'bus licenses were issued, only 13 of them motor vehicles; in 1912 there were issued 3,284 'bus licenses, of which no fewer than 2,908 went to motor buses. And despite the decrease in the number of licenses issued-which is equivalent to the number of vehicles on the streets-the increase in the number of passengers carried, as stated, was enormous

The same tendencies appear with regard to motor cabs. During the 9-year period from 1903 to 1912 the number of licenses for cabs of all kinds has fallen off by more than 1,000. In 1903 11,405 cabs were licensed, among them one lone motor cab; in 1912 but 10,354 cabs were licensed, but no fewer than 7,969 were motor vehicles.

#### Total Traffic Shows Increase.

The decreases in the numbers of some types of vehicles has been more than balanced by increases in the numbers of vehicles of other kinds, for in the one year from 1912 to 1913 there was an increase in the total traffic in the streets, as indicated by count of 27.682 vehicles more in 1913 than in 1912 at the same points. This increase amounted to 3.28 per cent. in numbers, but there was a corresponding increase of 5.06 per cent. in volume, indicating that the congestion has increased more rapidly than the

number of vehicles. A chart accompanying the B. O. T. report shows the proportionate values of the different classes of vehicles in the streets.

Vehicles. Horse-drawn passenger. Horse-drawn trade	Per cent. in Number 2.3 27.6	Per cent. m Volume. 1.6 41
Street car Motor 'bus Motor cab Private motor cars Motor trade vans.	9.2 11.6 6.8 7.7	42.6 28.5 10.8 2.1 2.4 3.1
Bicycles and motorcycles Barrows	29.7	

So far as numbers are concerned, the motor vehicles practically balanced the horse-drawn vehicles; they caused only 43 per cent. as much congestion, however, and in proportion to the numbers in use motor 'buses caused only one-third as much congestion as street cars.

One of the results of the increased use of motor vehicles is that Londoners get about more than they used to. The average number of trips per head in 1903 was 145, while in 1912 it was 244, an increase of 68 per cent.

#### Density of London Population.

One of the reasons why traffic conditions are worse in London than in any American city is that the population is much more congested. Greater London's population of 7½ millions lives within an area of 693 square miles, which figures out at 60 persons to the acre. In New York the 4¾ million inhabitants have more room, there being but 26 to the acre.

Street accidents in London have increased at the same rate as the traffic which is to say that they have almost doubled since 1903. More than 80 per cent. of the accidents have occurred at speeds of less than 10 miles an hour. The increased number of accidents is attributed largely to the confusion of a large volume of mixed traffic moving at speeds varying between wide limits—in other words, to the presence of both fast and slow vehicles in the same streets.

#### Birmingham Cab Men Object to Rate.

The taxicab operators in Birmingham. Ala., are seeking to secure the repeal of a city ordinance which imposes a rate that the cab men say will take all the profits out of their business; the rates specified are 30 cents for the first half-mile and 10 cents a quarter-mile thereafter for from one to four passengers. A committee from the taxicab men has the matter in charge; they have been charging \$3 an hour for four-passenger cars and \$5 an hour for six-passenger rehiculas.

### SUGGESTS USED-CAR PRICE-FIXING BY DEALERS

# Head of Chicago Association Would Have Organization Act as Appraiser for Trade—Outlines His Plan.

"The used car problem is of more than passing interest to you, and all the members of the association in the gasolene and electric fields probably have wrestled with the problem more than any other one in connection with their business. The subject probably has been discussed more than any other in connection with the industry," said Allison.

"I am not in favor of this association trying to do the impossible thing—endeavoring to control the allowance and resale of used cars. We cannot do this for a good and sufficient reason—the law prohibits it.

"At different times it has been proposed to form a company by each member investing a certain amount of money and have such a company handle all used cars. Personally, I think this is not practical. This has been tried in other cities without success. Competition is the life of trade. You can't expect to solve the most intricate problem of your business by having all used cars handled by one second-hand company. You know from your own experience that you can get better prices for used cars through your own individual establishments than the average company handling exclusively second-hand cars. You each must work out your own used car problem in your own way. However, I have a plan I would like to submit for your consideration.

#### Would Have Appraisal Committee.

"We have to deal largely with two classes of prospects:

"First. The one who is trying to make a long-trade deal with you to get a part or all of the commission you are entitled to.

"Second. The one who honestly thinks his used car is worth more than the actual market price.

"To the latter class we can appeal most strongly through this association, and the former class we can make realize that we know, through the association, the value of his used car.

"About two years ago, I served on your used car committee, and we recommended at that time the publicity feature, and you adopted it. Since then a large number of our members has filed with the association the allowance prices

Has any one actually solved the used car problem? It is a great, big problem, and some day it is going to be solved. Some day, every dealer will realize on the sale of used cars the legitimate profit to which he is entitled.

In the meantime, H. M. Allison, who is the Chicago Packard manager, and who last week was elected to the presidency of the Chicago Automobile Trade Association, has proposed a new method of handling used cars. It is a plan that might be put in operation, not only in Chicago, but in New York, or Peoria, Ill., or Kalamazoo, Mich.—anywhere, in fact, that there is a dealers' organization.

Briefly, Allison would have the Chicago Automobile Trade Association act as an appraiser for members of the organization and others. He suggests a committee whose duty it shall be to place a proper value on used cars, the valuation to be based upon monthly lists of allowances furnished by members. Then any dealer would know exactly the market worth of a particular car; all dealers would be placed on the same footing in disposing of used cars. The association's appraisal could be used in convincing the prospective purchaser of the market value of the

These propositions Allison stated to the members of the Chicago Automobile Trade Association during the course of the last meeting. He also delved into the question of shop labor and suggested as a remedy for converting losses in such departments into profits that an increase of 10 cents an hour be made over the present rate for labor.—Editor.

on the particular make or makes of cars they handle. This was a move, in my opinion, in the right direction, but we have not gone far enough.

"I propose that each member of the association file the allowances on used

cars every 30, 60 or 90 days, and that we have several committees appointed on appraisement. For example: We could have a committee representing all of the electric dealers, with the head of each organization, or the manager of the used car department of each electric dealer's establishment. We also could have committees representing the gasolene cars. For example—one committee for cars under \$1,000; and other committees as follows: For cars from \$1,000 to \$2,000; for cars from \$2,000 to \$3,000; for cars from \$3,000 up.

"These committees should meet monthly and appraise the various makes and models of used cars. If these committees spent, say, one day a month on appraisement, it would save members of this association thousands of dollars a year. They would have the allowance prices of the members as a guide. The committee would know whether or not, the cars were selling at, above or below the allowance prices and they would have the right to appraise them accordingly. When cars of a certain model were not moving, they could analyze the reason, and if it was on account of the price, the appraisement could be

#### Charges for Quarterly Reports.

"This would form a guide to each member of the association and could be used to advantage in convincing the prospective purchaser of the real value of his used car.

"We are in the great central market of this country and we should make the best of it by advertising the fact that dealers can secure from the Chicago Automobile Trade Association an appraisement on various makes of used cars, furnished quarterly, at \$10 per year. We should be able to get at least 1,000 dealers to pay us this amount if we will all put our shoulder to the wheel and push the good work along This would mean \$10,000 revenue to this association.

"If we could get this revenue, we could do some real work on motor car appraisement. The information we could furnish in this way to dealers would be invaluable. Ten dollars per year for such information is a mere trifle. The dealers would save it many times over in convincing owners of the real valuation as established in this great central market for used cars.

"I already have approached some Packard dealers within a radius of 500 miles of Chicago and every one of them has assured me that he would be more than pleased to subscribe the amount for the information our association could furnish. If this plan were approved, and each and all of you would solicit the dealers in the cars you handle, I am sure that you could secure a very large number of subscribers. Dealers subscribing could be furnished by the association, on application, with all the cars for sale on the street of any particular make and model they might have asked for.

#### Advertise to Used Car Buyers.

"If we could secure the information, we could take up another phase of publicity, if you consider it advisable. The association could advertise in a small way in Chicago papers, magazines, or in any way that would show results, making an attractive appeal to the prospective purchaser of used cars to ascertain from our association the appraised value of any used car on the market. This information would be furnished without charge.

"Suppose a prospective customer was figuring on buying a used electric and indicated the make of car and year's model preferred, he could be furnished with the appraisement on this car and at the same time every dealer in Chicago, who is a member of this association, having such a used car for sale, could be furnished with this inquiry and all would have a fair chance to get the business direct. I doubt if the trade association has been instrumental in giving the dealers any prospects heretofore. This might result in attracting many prospects through the association advertising.

#### Losses on Labor Charges.

"I want you to consider an increase in our charge to the customer for labor. If we can get some revenue through the sources above referred to, the association can afford to engage an expert to analyze the shop overhead expense and show you what your labor is actually costing you. Cost accounting today is a science in any modern business. In the retail motor car business, it frequently happens that you cannot have expert accounting and you are unable to arrive at your actual cost of labor.

"In the business which I represent, we

think we know, by most modern accounting methods, what our labor costs us. We know that during the last fiscal year we lost \$4,000 on productive shop labor when we charged the consumer 75 cents an hour for labor. If we had charged 10 cents an hour more, we would have changed a deficit of \$4,000 to a \$2,000 profit.

"Are we not entitled to a profit on our labor? Why should we furnish labor at less than cost? Does any other business work for the consumer in such a manner? I say, No.

#### Overhead That Eats Profits

"For example, a few days ago, an electrician was fixing the house telephone in my office. I asked him how much per hour he received and he said 75 cents. Now, while he was getting 75 cents for his labor, the company for which he worked had nothing like the overhead in the way of shop facilities that you have in the motor car business. In other words, the space he was occupying was paid for by us, but the space a motor car occupies when you are charging from 60 to 75 cents an hour for labor is paid for by you. The company for which this electrican worked charged us \$1 per hour. This profit on labor, no doubt, pays for its small overhead and gives it a reasonable profit to which it is entitled.

#### Labor Rates in Other Trades.

"Take the jewelry business—for example, Spaulding's. Watches are repaired by piece-work. Clocks, however, are repaired at the rate of \$1 per hour. You can repair a lot of clocks in the space occupied by a single motor car of any size.

"The average charge for labor in the following different lines of trade is 87.2 cents per hour: Steam fitters, plumbers, gas fitters, sprinkler fitters, sheet metal workers, electricians, structural iron setters, ornamental iron setters, painters. You probably know from experience what they charge you for labor. Now, why should you sell your labor at less than cost?

"The Portland Automobile Trade Association adopted a rate several months ago of \$1 an hour for mechanics and 75 cents an hour for helpers. I, personally, favor the flat rate.

"To give you a bird's-eye picture of what 10 cents an hour increase would mean to the members of this association. I figure out that if each of our members employed 10 mechanics, and if all labor was productive labor, it would mean

\$300,000 per year. Supposing only twothirds is productive, it would mean \$200. 000."

#### New Orleans to Boost Electric Car.

With the object of boosting the electric vehicle business in their city the electric car dealers in New Orleans have formed the nucleus of a trade body to be known as the Electric Vehicle Association of New Orleans; at a luncheon in the De Soto Hotel, attended by 28 men, T. C. Rhodes was chosen president and was empowered to appoint an executive committee of seven members. W. E. Clement is secretary.

The organization thus far is somewhat under the guidance of the battery and electric car manufacturers through their representatives in the Southern city and they aim to demonstrate to the dealers the workings of batteries and electrical apparatus and cooperate with the retailers in building up an electric car sales and service business.

C. W. Bell, of the Electric Storage Battery Co. told what had been accomplished by such an association in Philadelphia and suggested a campaign of educational advertising. Other speakers were A. D. Stevenson, Edison Storage Battery Co., and H. J. Meyers, Jr., Baker Motor Vehicle Co.

#### Danville Dealers and Repairmen Unite.

The Danville Automobile Dealers' Association, Danville, Ill., and the repairmen of that town have united in the Danville Automobile Dealers' & Repairmen's Association; dues are \$1 a month, work regulations are provided and prices and business conditions will later come within the scope of the organization's work. The officers, who were elected following a banquet and smoker, are as follows: President, Burt Jones; vice-president, H. Linne; secretary, Dr. Seawright; treasurer, Will Holmes; trustees, H. Gast, E. Chambers, A. Hofman, Stanley Snyder, and E. B. Collins.

#### February Record Month for Buick.

With the highest mark in his history in February, the Buick Motor Co. has to date sold two-thirds of its output of 32-000 cars. Deliveries for October exceeded any past month; November, ordinarily the beginning of a dull period, surpassed October, and December was nearly equal to November. January exceeded the average for the preceding three months by 33½ per cent... and February was still greater with cash sales of 1,226 cars. Orders are in hand for all of the March and April product.

### TOO MUCH CONFIDENCE WORSE THAN NONE

### Reilly Enlightens His Protege on the Wisdom of Never Being Too Sure—"Work to the Finish," His Advice.

"Nothing to it!" was Tommy Trumbull's nonchalant remark as he turned around in his chair to answer Reilly's question about a prospect. He stuck his right thumb in the right armhole of his vest and impressively continued: "As a man thinketh in his heart, so he is! I think I want to sell Honkinsen a car; in fact, I think I will sell him a tour-

You know everybody's for the Uplift now, even to Charley Murphy of Tammany Hall. The lecturer explained the theory so well that everybody understood it and forgot it the same night. The main thing I remember was that about every three blocks he said 'As a man thinketh in his heart so he is.'"

"Hot stuff!" ejaculated Reilly.



"AS A MAN THINKETH IN HIS HEART, SO HE IS," SAID TOMMY

ing model. Therefore, he's as good as sold already; all that remains is for me to get the money."

"Yes, just get the money. We can find a place for it most any time; we won't have to build on any additions," . replied Reilly.

"Aw! I didn't mean all of that as-a-man-thinketh stuff," corrected the tyro salesman. "But honest, I think Honkinsen will buy a touring model. He seems—"

#### Tommy Absorbs a Little Uplift.

"But where did you get the as-a-manthinketh idea? Sounds like Confucianism, or something like that."

Tommy teetered in his chair and laughed. "Oh, that stuff? I went to a high-brow uplift lecture the other night and the lecturer told us all about it.

"Yes, some hot!" returned Tommy.
"Once in a while he got low enough
down so I could grab a section here
and there, and as near as I could gather
he was telling what a man could do with
self-confidence."

#### What Self-Confidence Is Like.

"That's good dope," replied Reilly.
"In fact, self-confidence is like booze and a lot of other things. It's all right if you haven't too much."

"If I remember correctly, you told me one day all about what a good thing it is," asserted the younger man. "Didn't you tell me that the man with self-confidence stood a better chance to succeed than the man without any?"

"I did. But I evidently neglected to state that too much is just about the same as none at all." "Yes?"

"Very true. Do you remember your friend Dick Wahle, who was going to raise ructions down at Chester Bender's salesrooms?"

"Yes."

"And do you know what he's doing now?"

"Clerk in the stockroom."
"Some ructions, wasn't it?"

#### Had Too Much of a Good Thing.

"The blow almost killed Richard." smiled Tommy. "He hasn't been able to figure out yet just how it happened. He was going to sell a million cars a week and be sales manager the second week and own a business of his own the third week. The fourth week he was going to own a factory and then repeal the Sherman law and have a trust. But he stepped on a banana peel somewhere."

"Well, he has self-confidence—barrels of it!" replied Reilly, "and that was what ailed him. If he had less confidence and more willingness to work he might have had a trust in the end. The world is full of little Dickies like that; they replace work with confidence, facts with bullhop and bird seed and results with dreams. We had such a man here once upon a time, and he was an average salesman, too; and he never will be anything more than average, either."

"No good?" asked Tommy.

#### Salesman Who Was Too Sure.

"Yes, he was good," replied Reilly. "He was a neat appearing man and had many of the elements which enter into the makeup of a good salesman, but he never got up to his real, possible efficiency. He had too much confidence; he would go out and work on a prospect and make great progress; at least he seemed to. But so many of his sales slipped away from him. He was forever reporting that So-and-so was going to buy a car and then finding that he had made a mistake; generally he didn't discovered his error until the prospect grew cold and signed up for another car."

"How did it happen?"

"It was this: He would work his head off on a prospect at the beginning and



would get him coming along in fine shape; he would arrive at the point where the sale seemed assured—it was assured had he kept on with it, but at that point he would sit back and wait for the man to sign the contract, and that was where he lost out. He became so confident of the prospect's inability to get away from him that he didn't watch him; he didn't follow up his advantage, and thereby lost what advantage he had gained.

#### Big Order That Went Wrong.

"He came in one day and said he had an order for six runabouts, to be used by big sales organization's salesmen; I asked him whom he got the order from He said he knew the company was going to buy six cars and that the sales manager had practically assured him that our car would be the choice. Some time later I asked him how the order was and he said the company had changed its mind and was apparently going to buy from the Prince dealer. They did, too; they bought not only six but eight cars. I asked him for an explanation, but he couldn't give it; he was sort of dumbfounded. He couldn't understand how he had lost the order.

"Charley is different; he's a plugger—and the plugger more often wins. Charley doesn't believe a car is sold until we've got the money in the bank. He never was a man who could do things so much easier than other people, and what he's done he had to work for; when he goes out on a sale he works hard until he gets the contract and then he keeps right on the job until he gets the money and the car is delivered. With him nothing is done till it's finished."

"No 'as-a-man-thinketh' business there, eh?" commented Tommy, as he made a note of some description in his pocket notebook.

#### Wasn't Sure Till He Saw It Work.

"The 'as-a-man-thinketh' is all right," replied Reilly, "but there's a limit to everything. Confidence is good; a man can't do his best without it. If he believes he can do a certain thing he is much more likely to accomplish it than if he has doubts as to his ability; in the latter case he is always expecting something to rise up and block his game and, when it does make its appearance he regards it as foreordained, as it were, and doesn't go at the obstacle the way he should.

"On the other hand, the man who goes out to make a sale in the belief that he is able to do it, but will have to work to get there is the one who will forge ahead in the home stretch; he is the man who keeps on plugging and watches his tires until he gets the checkered flag.

"Chester Bender himelf is one of the best examples I know of a man who succeeds with a small amount of confidence. When they held our dealers' show last winter he put a special turntable business in his booth; he had used the same thing in his salesrooms, and it had worked satisfactorily, but despite that fact he wasn't cocksure it would work at the show.

"I ran across him down there on Saturday afternoon, working away at the thing with his men; he told me then that he wished he had more confidence in himself, that he knew the thing had worked in the salesroom but that he wasn't sure it would work at the show until he saw it running. He said he wasn't sure of anything until he knew it was done. What did he do? He worked on that device until the power was turned on and it started. He knew it was done then.

#### Tommy Imparts a Near-Secret.

"When the Progressives carried the last election here in town, they seemed to have a sure thing; sentiment seemed predominantly for them, and it looked like a big majority. But old Billy Gratz, who was engineering the game, cut his eye teeth in politics before you were born and he said he could tell more about it the day after election. Some of the workers were inclined to sit back in the harness and begin shouting about three days before election, but Billy called a meeting and gave them the awfullest verbal whipping a man ever got. He told them to work until the polls closed and then keep right on for a couple of hours so as to make sure they didn't quit ahead of time.

"He kept every man on the jump and at top speed right up to the last minute. You know the result. The Progressives won by 300—a very small margin—and they lost one or two minor offices. Had Billy's political salesmen had their way they would have knocked off just soon enough to have lost that 300 votes."

"I've seen that in myself," said Tommy. He looked down at the floor as he said it and looked well the part of a man about to unburden himself of a hidden fault or offense. "When I came here I was new, absolutely new. I didn't know much of anything about the selling business, but I was determined to get along—"

"You've done fairly well. Tommy."

"I knew I was green, and I started in to work like the devil. I chased a couple of prospects until they were just about exhausted, I guess, but I landed the sales. That gave me confidence, and I got along well for a time. But then I got a touch of this over-confidence, I imagine, and I lost a couple of sales that I was pretty sure I would get. As you say, I couldn't understand it, but I made up my mind that the next prospect I went after was going to be mine or I would know why; after that I did better."

"Yes, I noticed that, Tommy."

"You did!" The youthful salesman leaned forward in his chair in surprise. He had thought he was telling a great secret.

"Certainly, I did," replied Reilly. "I was going to speak to you about it, but I thought I'd let you alone and see how you made out—and I'm glad I did."

"Say!" said Tommy. "You don't know any more of my family secrets, do you?"

#### "Don'ts" That Help Electric Cars.

Because lack of experience on the part of drivers, rather than lack of ability on the part of trucks, causes much of the trouble that occurs in bad weather such as New York recently has experienced according to the opinion of the New York Edison Co., the automobile bureau of that concern has sent to electric truck owners and drivers printed cards bearing instructions for forestalling trouble and getting out of it. The "Don'ts" are as follows:

"Don't try to accomplish as much in the snow as you do on clear asphalt.

"Don't start out in the morning until you are satisfied that your battery has been fully charged.

"Don't try to push a drift ahead of you. Leave it to the snow contractor.

"Don't sit while all the wheels go 'round in the slush. Have a box of sand and a kitchen coal shovel handy. Use sand liberally. It is cheaper than elec-

"Don't throw your power on full.
Work it up gradually, not forgetting the sand box.

"Don't forget an anti-skid device. An improvised one may be made by looping three or four turns of rope around your tires.

"Don't forget that time may be gained by leaving your wagon at the corner and making side street deliveries on foot

"Don't let your truck stay out all night for want of a boost. The New York Edison Company has twenty-four emergency charging stations in New York where your firm's credit is good.

"Don't lay this aside until you have learned its lessons."

# RECENT DEVELOPMENTS in ACCESSORIES

#### Here's the Crankless Air Pump.

The Triphoon air pump, manufactured by the Green & Swett Co., 737 Boylston street, Boston, Mass., resembles the conventional type of air pump in that it pumps air and has pistons reciprocating in its cylinders; otherwise it is entirely different. Briefly, it has three cylinders that are grouped, not in a row, but in a triangle, and it has no crankshaft or connecting rods, the pistons being reciprocated by a rotating cam; motion is imparted to the pistons through rollers. Cam surfaces and rollers are hardened steel.

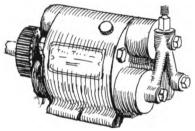
The pump is compact, being but 6 inches long, 4 inches wide and 4 inches high; it can be driven by gears or by chain from any convenient shaft on the motor. At the speed recommended—800 revolutions per minute—it will pump a 34 x 4 tire to 80 pounds in 1¾ minutes, the makers state; but the speed can be run up to 1,500 revolutions per minute without damage. A 35 x 7 tire can be inflated to 90 pounds in 3 minutes.

The pistons are packed with metal rings and the construction throughout is substantial and durable. While brackets are supplied by the makers to fit most of the standard cars on the market, the pump can be fitted to practically any car by making a simple bracket of cold-rolled steel and placing it where drive can be taken from a pump- or magneto-shaft. Gears and chains are carried in stock that will suit practically all conditions.

In addition to the regular car type of pump, which lists at \$20, and at \$25 with gears and brackets, three models of electric motor-driven pumps are built for garage service, mounted on low-wheeled trucks. These models differ only in the driving motor, which may be a direct current motor, an alternating current motor or one that will run on either current. The list prices are \$75, \$80 and \$95, respectively.

#### Convenient Revolving Searchlight.

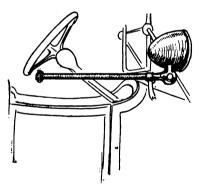
There are many occasions when the driver of a car would like to project a strong light in some particular direction, but cannot do so because of the fixed positions of his regular lamps. For just such emergencies the Aiken revolving lamp, which is sold by Frank Dodge,



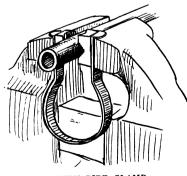
TRIPHOON AIR PUMP



WELCH BRASS HAMMER



AIKEN REVOLVING LAMP



VLCHEK PIPE CLAMP

420 Boylston street, Boston, has been designed.

As the accompanying illustration

shows, the lamp is attached to the dashboard or other convenient support, and the operating handle brought within easy reach of the driver. The lamp then can be swiveled so as to throw its beams in any desired direction to read road signs, look for house numbers, illuminate another car in trouble by the roadside, chase darkness from the gasolene filler opening, and so on almost indefinitely.

The lamp can be attached to any car and operates, of course, either on a battery or a generator circuit. The finish is black, with polished nickel trimmings; the list price is \$30.

#### Brass Hammer for Fnished Work.

Extreme simplicity of construction combined with adaptability to the purpose for which it is intended, marks the brass hammer made by T. F. Welch & Co., Boston, Mass., which is shown in the accompanying illustration. The hammer is intended for use on work that would be marred or injured by a steel hammer and is of a grade of brass particularly suited to the work. The handle is of inserted steel wire and is stiff and strong and will stay in place. Various sizes are made, ranging from a 2ounce hammer with a head 1/2 inch in diameter by 11/2 inches long to a 11/2pound tool with head 114 inches in diameter and 31/4 inches long. The list prices range from \$2.40 a dozen for the smallest to \$12 a dozen for the largest size.

#### Spring Clamp for Gripping Pipe.

In a shop where a small amount of pipe-work is done occasionally and there is no pipe vise, the vise clamp shown in the accompanying illustration should prove of value. It is manufactured by the Vlchek Tool Co., Cleveland, O., and consists of a pair of clamp jaws connected by a spring; the jaws are placed between the jaws of an ordinary vise and are pressed outward by the spring so that they remain in place. Lugs on the tops of the clamps prevent their dropping or slipping down. The work, of course, is placed in the V-shaped recesses if a pipe or other round object; the spring causes the clamp jaws to follow the vise jaws in and out as well



as if they were solid with them. Stock from 1/4 inch to 1/4 inch in diameter can be held. The list price is 75 cents per pair.

#### Simple Separator for Springs.

When a tool that must have one moving part is reduced to such simplicity that it has but two parts all told, it can be fairly claimed that it is about as simple as possible. Such is the case with the spring separator that has been placed on the market by B. Morgan, Newport, R. I.

the accompanying illustration As shows, the tool consists of a steel bar with a wedge-shaped hook at one end and a wedge-edged cam at the other; the cam is formed integral with its handle. By placing the point of the hook in the crevice between two spring leaves and the edge of the cam-wedge on the opposite side, and swinging the lever toward the spring, the two opposite edges will be brought closer together and forced between the spring leaves. effecting a separation that will make the insertion of lubricant an easy matter. Three sizes are made, the list prices being 50, 65 and 75 cents, respectively.

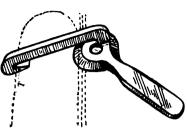
#### Spark Plug That is Minus Nuts.

Simplicity and substantial dimensions of parts contribute to the durability of the R-M spark plug, which is manufactured by the Randall-Miller Co., 1,000 Boylston street, Boston, Mass. The porcelain in particular is of heavy design. The lower half of the porcelain and the bore of the shell are made to the same taper; the porcelain is pressed into place after being wound with asbestos, and the upper edge of the steel shell is spun over a flange on the core. The result is a permanent joint that will not leak, the makers state, and of course is made without nuts or bolts An annular flange near the lower end of the porcelain protects the asbestos packing from direct contact with the hot gases in the cylinder. The central electrode and the two side electrodes are of a special metal that is said not to pit in service. The list price of a single plug is \$1, and of 6 plugs \$5.

#### Trouble Lamp That Needs no Holder.

A trouble lamp that will "stick" to anything made of iron or steel and so need not be held while in use is manufactured by the Housel Mfg. Co., Inc., East Rochester, N. Y. Outwardly the lamp is just a cylinder an inch in diameter, the greater part of the cylinder being a reflecting tube, in the bottom of which the electric bulb is located.

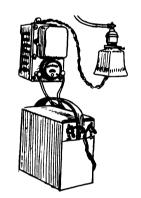
In the base of the cylinder there is a compact but powerful electro-magnet that is energized by the current passing to the lamp. When the current is turned on the magnet will "stick" to any iron or steel part, and so can be used at any



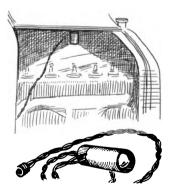
MORGAN SPRING SEPARATOR



R-M NUTLESS SPARK PLUG



WAGNER CHARGING RECTIFIER



HOUSEL MAGNETIC LAMP

part of the car. With each lamp is supplied a 10-foot cable, with plug that can be screwed in place of any of the regular lamp bulbs on the car. The lamp is designed to work on a 6-volt circuit. Its

weight is 3 ounces. The list price is \$1.50 with any style of connecting plug.

#### For Charging Batteries at Home.

As most people who own electriclighted automobiles know, storage batteries can be charged only with direct current, while in a majority of cases the regular house-lighting circuits carry alternating current. To convert this "A. C.," as it is called to "D. C.," or direct current, the Wagner Electric Mig. Co, St. Louis, Mo., makes a rectifying set that can be supplied for any battery from a small ignition type up to the larger electric lighting batteries.

The use of a charging plant that can be used at any time makes the owner independent of outside charging stations; the battery can be put on charge in the evening and left until morning, the current practically regulating itself. The rectifier, which is shown in the accompanying illustration taking alternating current from a standard electric lighting fixture and delivering D. C. to a storage battery, is of the vibrating armature type.

An armature vibrates in synchronism with the alternations of the supply current, and all the current waves passing in one direction are sent to the battery, the opposite waves, which would discharge the battery current, being cut off. Some models are made with double vibrators, which are so constructed that both current waves are utilized, one being, in effect, reversed so that all traverse the charging circuit in the same direction.

While the illustration shows the instrument with an ammeter mounted. it is not an absolute necessity and the set can be had without a meter. The prices vary according to the size of the battery to be charged, the type of equipment, and so on. For instance, the smallest size, for charging a three-cell six-volt ignition battery, lists, without ammeter, at \$35; with ammeter, at \$45. This size delivers 3 amperes. The largest size is for a 5-cell, 10-volt battery and delivers 15 amperes; the list price is \$70 without meter and \$80 with meter. Most of the larger sizes are regularly fitted with double movement, utilizing both waves of the alternating current.

#### To Make Pedals Less Slippery.

A piece of leather used to cover the pad of a pedal that has become worn and slippery will afford a much better foothold than the iron. Another plan is to use a piece of rubber, which may be corrugated matting, sheet rubber or even the heel of an old rubber-soled shee put on with the rubber side up.

# Advanced Maintenance

#### S O L D E R I N G — P A R T T H R E E

(Continued from Last Week.)

By George Fernwell

In the first of the opening series of articles on the high-grade maintenance and repairing of pleasure cars and trucks, the subject of soldering was treated in a preparatory manner.

Consistently with the aim as expressed in the introductory matter, comprehensive attention was given to such details as it is believed are rarely, if ever, taught or learned by other than experience. This latter applies also to the description covering a practical and workmanlike job on a typical radiator repair. In both introduction and example, the idea was adhered to of avoiding amateurish ways and methods, and of offering profuse and minute descriptions of precautions and methods which a skilled workman would use.

#### Simplifying Radiator Repairs.

Considerably more might be written in extension of the introductory matter on soldering, but it is doubtful if further extended abstract treatment of the subject to its limit would be as helpful as would small doses when needed, administered in the form of additional practical examples of high-grade work which might involve difficulty in either soldering or preparing for soldering.

Of the considerable uses of solder in the make-up of a car, those which tax most the wit and skill of the workman are to be found in the construction and

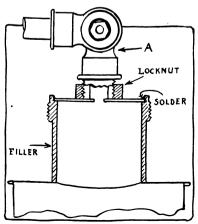


FIG. 1—DIAGRAM OF METHOD OF CON-NECTING THE AIR PUMP

#### Our Third Week

This Advanced Maintenance Department is for the dealer, the repairman and the garageman. It tells him how best to solve the repair and maintenance problems that are continually arising to harass the repair department.

The first and second installments treated of soldering in an introductory manner—made plain how to care for irons, how to heat them to just the proper temperature, how to go about the work of soldering in order to get the best results. The third installment, which appears herewith, goes a little more deeply into the subject. It treats of repairing radiators; and radiator repairing is not easy to those who have had no experience at it.

The present installment, like the others, is written by a repairman who has gained his experience in the school of hard knocks. He knows whereof he speaks. He knows how to do these things because he has done them himself. He is telling you how to do them—how to make thoroughly practical repairs.

What are your maintenance problems? Have you a knotty question that you want answered? What troubles you most in your repair department?

Write us your questions. We will answer them. Write your questions plainly, using only one side of the paper. We are here to help you, but you must help yourself by asking questions.—Editor.

repairing of the radiator. As a necessary preliminary to subsequent examples of radiator work, it will be in line with the aim of submitting unusual details, to describe an equipment and outline a system for testing radiators when it is required, as follows:

1—To locate readily small leaks which are difficult to trace to their exact sources by other means.

2—To test the soundness and strength of the finished work of repairing leaks in radiators.

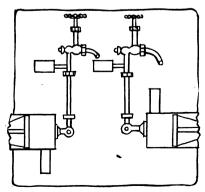
3—To permit of rapidity and facility in repeated tests, as in instances in which the same radiator under repair may require testing as many as 10 to 20 times in alternation with as many sessions of repairing leaks.

4—To accomplish the above without admitting water to the inside of the radiator for the similar purpose of locating leaks.

#### Outfit for Radiator Testing.

The last is particularly pertinent in the event of repairs being necessary to, or near, the frame or case of the radiator. As all the water could not be completely drained from the radiator, the residue would have to be given time to evaporate. The latter process could be hastened by placing the radiator in a warm place. It would be impossible to solder a fracture properly, if the smallest quantity of water be retained inside at or near enough to the fracture to be vaporized by the heat imparted by the soldering iron. The vapor thus formed would blow holes in the solder used to repair the fracture, before the solder could become cool and solidified.

To return to our main topic, an equipment which fully meets the requirements



FIGS. 2 AND 3—ARRANGEMENT OF AIR PUMP SWIVEL CONNECTION



described would consist of: A testing tank nearly filled with clean water, a portable table or bench, a foot air pump, an air pressure gauge, a combined check and needle valve, and a swivel pipe connection for use between radiator and gauge.

#### Fittings for Testing Tank.

For accommodating a wide range of makes and sizes of radiators having varying locations of hose nozzles, a testing tank is here described, of suitable dimensions and construction, so planned as to avoid the need of an excessive bulk of water. As shown, Fig. 5, the tank is of rectangular form, 35 inches by 35

creasing the depth of the rectangular or cubical tank proper.

3—The necessary frequent removal and renewal of the test water in the tank involve the lesser amount of labor and delay, compared with a correspondingly deep cubical tank. The water should not be used continually for more than one day, as it becomes acid.

The portable bench, A, Fig. 4, should be of the same surface dimensions as the bottom of the test tank but with circular holes cut in the bench top to receive the wells, B B, Fig. 4, in the bottom of the tank. A very convenient height of bench is 24 inches.

A gas fitter's test pump, C, check and

the radiator alternately, face upward and downward.

#### Starting the Repair.

Assuming a testing equipment similar to that described, to have been made available for use, the system or mode of procedure in the case of a radiator would be as follows:

Commence by deciding where and how to attach the pipe or swivel connection from the testing pump to the radiator Nearly all radiators have a metal plug or a cock, screwed in the bottom, to permit of draining. The plug or cock may be removed and the pipe connection for the testing pump substituted. Should

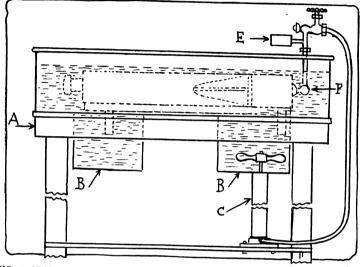


FIG. 4—SECTION OF RADIATOR TESTING TANK, SHOWING CONSTRUCTION AND AIR PRESSURE CONNECTIONS

inches by 8 inches deep, and made of galvanized iron.

The two wells diagonally located in the bottom of the tank are for the purpose of receiving the inlet and outlet radiator-nozzles, respectively. On some of the older makes of radiators, extremely long nozzles were used, requiring a correspondingly deep testing tank, or the use of wells such as are herein described.

Different makes of radiators vary in the relative position of the inlet and outlet nozzles; some have the inlet to the right of the outlet, others the reverse. This variation is provided for in nearly all instances by the diagonal location of the wells in the bottom of the testing tank.

The advantages of the wells are:

1—They permit the radiator to be immersed for testing in the alternate positions of face upward and downward.

2-The latter is possible without in-

needle valve and air grauge, E, Fig. 4, form an effective combination for applying the required test pressure.

#### How Connections Are Made.

A tire pump with gauge and check valve may be adapted successfully for the same purpose. As it is customary and expedient to use a test pressure of only 5 to 10 pounds maximum to the square inch, it is preferable to use a gauge with coarse graduations, or one that registers no higher than 25 pounds.

A very convenient test connection between the check valve and the radiator can be made with a heavy single swivel gas bracket joint, A, Fig. 1, and F. Fig. 4. 14-inch iron pipe size, with suitable male thread connection to screw in the drain pipe in place of the drain plug or cock usually located at the bottom of the radiator.

Fig. 2 and Fig. 3 show the convenience of the swivel for immersing and testing

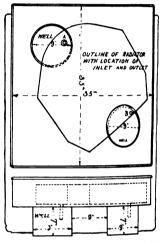


FIG. 5—PLAN AND ELEVATION OF RADIATOR TESTING TANK

there be no drain plug, or should it be difficult to remove, the pipe connection may be attached to the filler.

The latter may be accomplished by removing the filler cap, carefully cleaning and tinning the filler opening, about one-eighth inch wide all around the rim. Next cut out a circular disk of thin sheet in. brass or copper, of a diameter that will correspond to the size of the filler opening. In the center of the metal disk drill a 1/4-inch or 1/4-inch hole and solder a 1/4-inch (iron pipe size) lock nut to the disk, concentrically with the drilled hole. The combined lock nut and sheet metal disk may then be soldered to the filler opening, so as to close it, except at the lock nut.

We now have a convenient substitute for a drain plate as a means of connecting the pump, by screwing the pipe connection into the lock nut assumed to have been soldered to the filler.

(To be Continued)

# Dealer's Legal Status

When the Car Is "Lawfully on the Road" and the Rights That Cars and Pedestrians Have.

. Ву Geo. F. Kaiser.

A recent tabulation figures the number of motor cars registered in the United States up to October 1, 1913, as 1,229,-530. Since that time the number has materially increased.

Imagine, if you can, nearly 1,500,000 motor cars driven about the roads of the country, without any regard for speed laws, their own safety, or the safety of others, and you realize in an instant the crying need of adequate laws to govern them, the sensible enforcement of those laws and the desirability that each motorist adopt for his motto that part of the Golden Rule which tells one to do unto others as he would have others do unto him.

The most vexatious part of observing a law of any kind is that, in order to conduct one's self in accordance with it, it is necessary to know the law, and, unfortunately, by far the greater majority of drivers and chauffeurs have but little knowledge of the duties and obligations which are imposed upon them, and what liabilities they may incur by a breach of the endless enactments passed for their guidance.

#### Lawfully on the Road.

The law of most importance to the motorist is the so-called law of the road, and the first paragraph of that law may well be entitled "Be Sure You Are Lawfully on the Road." By this we mean, have your car properly registered; be properly registered yourself and, if necessary, see that the driver of your car is registered.

At this time, every State, with the single exception of the State of Louisiana, has a State automobile law, and in every instance where there is such a law, it is necessary that the car be registered with the Secretary of State, or some similar official.

Where registration is required and a non-registered car is operated on the highway, or a car is operated by a driver not lawfully authorized to drive, there can be no recovery on the part of the car owner, or the passengers, for injuries to the car or its occupants, due to the neglect of other persons, unless the

party causing the injury is guilty of "wanton negligence."

The State of Massachusetts adopted this theory in the early case of Love vs. Worcester Consolidated Street Railroad Co., 99 N. E. 960, and just recently ratified it again in the case of Dudley vs. Northampton Street R. R. Co., 202 Massachusetts, 443, and in neither of these cases was the car owner able to recover damages.

When the driver is not properly licensed in most jurisdictions he is, in addition, guilty of a misdemeanor.

#### Privileges of Owner's Family.

The courts seem inclined, however, to be lenient with the driver of a car if he or she happens to be a member of the owner's family. In one Nebraska case, a minor son had his hands on the steering wheel of his father's car. The father sat beside him and controlled the throttle and the pedal. The father was convicted for allowing a minor under the age of 16 years to drive. He appealed from the conviction and the Appellate Court took the view that as he controlled the pedal and throttle, the son in reality was not driving the car, and discharged him.

Coryell vs. State, 138 N. W. (Nebraska) 572.

In a Connecticut case similar to this, where a minor daughter was driving a car and the duly licensed chauffeur occupied a seat in the tonneau, the car was damaged by being run into by a taxicab. The father brought suit, but the taxicab company set up that the daughter was not "accompanied" by a duly licensed operator. The court, however, refused to adopt this view and held that the chauffeur possibly was better able to render any necessary aid and assistance by reaching over the tonneau than if he were seated beside the girl, and allowed the father to recover judgment for the damages.

Hughes vs. New Haven Taxi Co., 87 Atl. (Connecticut) 721.

A properly registered car and driver have the same rights on the highway as any other vehicle. The Connecticut courts specifically stated this in Upton vs. Windham, 53 Atl. (Connecticut) 660; the Illinois courts, in the case of Christie vs. Elliott, 74 N. E. (Illinois) 1035, came to the same conclusion; so did the Indiana courts, in Springs Co. vs. Brown, 74 N. E. (Indiana) 615; and the Kentucky courts, in Shinkle vs. Cullough, 77 S. W. (Kentucky) 196, and also the Pennsylvania courts, in Silberman vs. Hyette, 22 Mont. County L. Rep. 39.

In Delaware we have the case of Simone vs. Lindsay, 63 Atl. (Delaware) 778, in which the court said "A public highway is open in all its length and breadth to the reasonable common and equal uses of the people on foot and in vehicles." And in New York we have the case of Lorenz vs. Tisdale, 111 N. Y. Sup. (New York) 173, where the court carefully pointed out that motor cars have equal rights but not superior rights on the highways.

#### Motor Equals Pedestrian.

There are numerous other cases which hold that pedestrians have equal rights—and that a motorist's right under a license is as great, but no greater, than that of a pedestrtian or other vehicle.

Turner vs. Bennett, 142 N. W. 999.

Tolmie vs. Woodward Taxi Co., 144 N. W. 855.

Borough of Applewold vs. Derch, 86 Atl. 1070.

The courts have been very careful in dealing with this matter of equal rights, as by way of illustration, the court, in Tyler vs. Hoover, 138 N. W. (Fowa) 128, saying "The driver of every motor car must know that travellers are found using the highways at all seasons of the year and all times of the night and day, and such a driver has no right to expect a free and unobstructed driveway, as does the engineer of a locomotive or the motorman of a trolley car.

#### Taxi's Time Worth Money.

When a taxicab is damaged through a collision and laid up, its owner may be reimbursed the amount it would cost him to hire a like machine for the time he is not able to use his taxicab.

In the case in which this decision was handed down by the Court, the owner of the taxi sued for damages caused by a collision with a furniture van, and as he was able to prove that the collision was through no fault of his own, the Court said he was entitled to be reimbursed; but if such machine could not be hired, then he might recover the profits he lost by its being laid up.

Universal Taxicab Co. vs. Blumenthal, 143 N. Y. S., 1056.



### HAMMERS IN LIGHT OF PROFIT PRODUCERS

# Makes and Models and Divergent Shapes Suitable for Different Shops—Soft and Hard Head Tools Contrasted.

The new apprentice's first day in the repair-shop wasn't altogether a happy one. To begin with, it was his first job, and he wasn't accustomed to being considered of a little less than no importance at all; and, further, there seemed to be a general inclination to "guy" him, which interfered sadly with what seemed to him very important work.

He had been assigned to the smallest and most rickety drill-press in the place, and the men who had the roughest kind of drilling to be done brought him their stuff, marked with chalky hieroglyphics, and when he couldn't quite fathom their significance his inquiries for enlightenment met with facetious grins and alleged funny answers. And all the time the work was piling up by the little old machine.

#### Tommy Gets a New Hammer.

When the new boy came to take an inventory of the tool drawer assigned to him, however, he received his worst shock. There were a few blacksmithmade flat drills in bad condition, three or four twist drills broken off too short for the more pretentious machines and badly reground, a couple of battered wrenches, a brace of badly treated cold-chisels—and a short stick of wood with an irregularly-shaped lump of iron on the end of it, styled hammer.

The new boy didn't know just what he would have to use a hammer for until he found that hammer and cape chisel were necessary to "draw" holes to keep them true and that he was expected to do numerous little chipping jobs as well when business was dull in the drilling line. To be sure, most of the flat drills were so bent that they had to be knocked true while in the drill chuck; but it was orthodox to do this with the wrench. But Tommy rebelled at the caricature of a hammer.

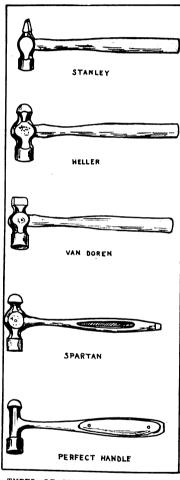
"How can I learn to chip with that thing?" he demanded of the operator of a "real" drill-press.

And he got in return a broad smile and the comment:

"If you learn to chip with that you'll be a crackerjack when you get a good hammer!"

Tommy gave it up, and struggled along as best he could with the freak

tool, until one day, when he was beginning to swing a little freely and could nearly always hit the head of his chisel without looking at it, he missed a shot, caught the end of his finger against the edge of a casting and neatly sliced it off.



TYPES OF MACHINISTS' HAMMERS

To be sure, the doctor bound it in place and it grew there; but it meant a tendays lay-off and the loss of just that much pay. And when he came back he went straight to the boss about it.

"Let's see the hammer," said the foreman. And when he had taken one look at it he fired it into the scrap-bin. "I'll give you an order on the stockroom for a new one," he said.

The hammer Tommy got was of the kind that is perhaps more commonly seen in a machnie shop than any other one kind-a ball-pein machinist's hammer. The pein of a hammer, be it said. is the appendix at the back of the head. and there are more different kinds of peins than anyone would think without doing a little investigating into the peculiarities of these tools of percussion There are many varieties of machinists' hammers that are alike except for the form of the pein. In the ball-pein class the hammer manufactured by Heller Bros. Co., Newark, N. J., and shown in one of the accompanying pictures, is typical of the best practice. It will be noticed that the "eye" of this hammer is long, giving an excellent seating for the handle-in fact, the eye is unusually long in this case, and the same is true of the many other machinists' hammers manufactured by the same concern. No one needs to be told that uncertainty in the relationship between head and handle is a glaring fault in any kind of a hammer, and the Heller long eye goes a long way toward making it an impossi-

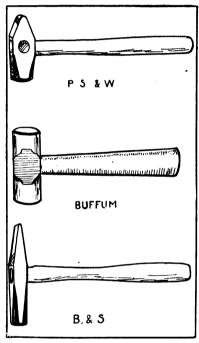
#### Various Hammers for Various Jobs.

The machinist's ball-pein hammer is a favorite type, as already has been stated. because of its adaptability to a wide range of work. It is the general purpose hammer par excellence; it is the accepted type for chipping; it is excellent for small riveting, the ball pein, properly used, being capable of doing small work very nicely. But though it can be used even for nailing, if necessary-in fact. machinists usually dislike the "feel" oi a carpenters' hammer-there are jobs where special hammers greatly facilitate operations. For instance, when a pin or bolt has to be driven out and there is only room for a very short hammer swing, the short-handled, heavy-headed plumber's calking hammer is a timesaver. When a hammer has to be used on a finished metal surface it is possible. of course, to use a block of wood or a piece of soft metal between the hammer and the work; but in many cases this is inconvenient. Further, part of the force of impact is lost and there is also a strong temptation to "take a chance"

with a steel hammer when there is nothing handy to protect the work. So some sort of a "soft" hammer really is a necessity in the garage and repair-shop.

#### Uses and Abuses of Hammers.

In a shop where but little riveting is done, so that a power riveter is out of the question, occasional riveting jobs can be better done with riveting hammers than with other types. Even hammers can be forced beyond their capacity, and often a light hammer is flung at a heavy job because there is not a flogging-hammer or a sledge available. A man of little strength using a hammer



HAMMERS FOR HEAVY JOBS

of proper weight for heavy work can apply far more force than a much stronger man with a hammer that is too light. And as for working in wood—and what repair-shop is there where an occasional woodworking job does not turn up?—a man never really knows the value of a good claw-hammer until he wants the claw badly and hasn't got it. And so on, almost indefinitely.

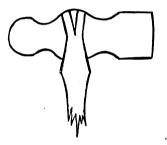
Clearly there is a broad field here to be cultivated by the wideawake dealer. If it is not possible to sell a man a hammer for one purpose or for one particular reason there are many other ways of arousing his interest and convincing him that he needs a hammer, or a set of hammers. To many a man a hammer is merely a tool to hit with, and there is no particular connection between the kind of tool and the kind of thing that

is hit. Such a man is more or less wide open to the efforts of the dealer, who can give him a bit of information, for his own edification, and at the same time

help business along.

A ball-pein is handy for a multitude of jobs, for the hard steel ball will strike a blow concentrating the impact on a small area, which frequently is a matter of absolute necessity. But for many classes of work the pein is made with a rounded edge about as long as the diameter of the face of the hammer, in which case it is known as a cross-pein hammer, if the pein is set at right angles to the handle, or a straight-pein hammer, if the edge of the pein is parallel with the handle.

The straight-pein hammer shown in an accompanying illustration is one of a long line of hammers of all sorts and sizes manufactured by the Van Doren Mfg. Co., Chicago Heights, Ill., a concern that specializes in hammers, and,



VANDOR HEAD FASTENING

further and even more to the point, specializes in the best hammers it can make. As might easily be guessed, the Van Doren company early attacked the loosehead evil, and after experimenting with all kinds of wedges and other fastening devices, decided that the true solution of the problem was to make the hammer itself of the proper shape to resist the tendency to part company. The sectional illustration of a hammer head of the Van Doren make-they style them "Vandor" hammers-makes plain the way in which the trick was turned and that once the wedge is driven home the head and handle cannot be separated without a disintegrating process.

#### Trip-Hammer Forged Tools.

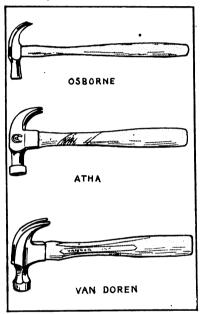
The third of the trio of machinists' hammers is illustrated by a cross-pein hammer made by the Stanley Rule & Level Co., New Britain, Conn., a concern whose name is seen not only on the hammers used in every mechanical art, but on an exceedingly wide variety of other tools. And, incidentally, many a tool that is so old that its maker's name is almost obliterated, but which still is it.

prime working condition, carries the Stanley name, for the firm has been making tools for a great many years.

A special forming process employed by the Warner Hammer Co., Cromwell, Conn., is said to be responsible for the extreme toughness of the company's tools. Tool-steel bar stock is used, and it is forged to shape, each hammer by itself, under a trip-hammer which does it work with a great number of sharp blows. The makers express the conviction that there is nothing equal to this forging method for producing fine tools.

#### Why Blacksmiths Are Strong.

"The smith, a mighty man is he"—and small wonder, for it needs something



REPRESENTATIVE CLAW-HAMMERS

more than willingness to work hard to swing a blacksmith's hammer all day. Just what a blacksmith's hammer looks like may be discovered by a glance at the illustration of an excellent example of the type, one of a long line of hammers -to say nothing of a host of other tools -made by Peck, Stow & Wilcox Co., New York. The head is short and chunky, and the tool is comparatively heavy, weighing, in the case of the P. S. & W. tools, which may be considered as representative types, from 2 pounds 10 ounces to 3 pounds, without handle. It is not an easy matter to get up the muscle required to handle such a hammer; but, on the other hand, it is possible to strike a mighty blow with it, which is the whole story, for there are times when the smith needs all the weight he can get into a blow.

Incidentally, when a blacksmith is

#### MOTOR WORLD

doing a piece of work that is a little too heavy for his hand hammer he enlists the services of a helper, who swings a sledge that will be light or heavy, according to the size of the job, but in any case requires both hands for its use. The smith holds the work and indicates, by taps of his hand hammer, where the helper is to hit with the sledge, and woe betide the assistant if he doesn't accurately locate his blows. And often the smith indicates, by the force of his blows, about how hard the helper is to hit—though not always.

Quite different from all the other hammers is the riveting hammer, which is made in all weights to suit the requirements of riveting work varying from the gentle tapping of the jeweler to the smashing swings of boiler riveters and bridge builders, who work in pairs, delivering alternate blows. The head is longer and less chunky than that of the blacksmith's hammer, though the lines are somewhat similar, in a way, as the accompanying illustration of a riveting hammer made by the Billings & Spencer Co., Hartford, Conn., makes plain. The B. & S. trade-mark is stamped on a wide variety of other hammers, and, as most everyone knows, on a host of other tools as well.

#### Hammers for Woodworkers.

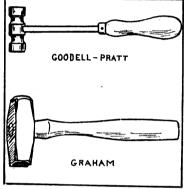
While an ordinary claw-hammer, or nail-hammer, looks a little out of place, perhaps, in the hands of a machinist, still it is a mighty handy thing to have round a car or in a garage, and this accounts for the fact that there is a growing tendency to include claw-hammers in the tool equipments of cars. This tendency has been noted, to cite an instance, by the Van Doren company, whose vanadium steel claw-hammer is especially adapted to such service. The tool is drop-forged from vanadium steel and is of a peculiar shape that is much more easily indicated by the picture than by a description. An important feature is the reinforcement of the claw by a thickening on the inside of the curve, insuring strength to resist the wrench that a man naturally gives the tool when making a particularly hard pull.

Many a man has said things that he was, perhaps, sorry for afterwards, just because the head snapped off a nail while being extracted. But if they had but known it the "language" was unnecessary, for the Atha Tool Co., Newark, N. J., makes a hammer that will pull out the most obstinate nail without even the rudiments of a head. The hammer is just a really good-looking hammer, so far as appearances are concerned, as

the picture makes plain; but its virtue, apart from generally high-class construction, lies in the fact that the V in the claw is so calculated as to its angles that it will grip "like death"—that's how the makers put it—a headless wire nail, or anything else, for that matter, and hold on till it comes out or pulls in two.

#### Some of the Little Fellows.

While the miniature claw-hammer that is so useful for light work is not needed as often as some of the other types of hammers, it is distinctly useful in light work in repair-shops, especially where there is a good deal of body work done. Like the larger tools, these little fellows are made in a variety of sizes and shapes; a convenient form is shown in the accompanying illustration of a brad ham-



SOFT FINISHING HAMMERS

mer made by C. S. Osborne & Co., Newark, N. J., which concern also makes a wide range of other tools and, incidentally, has been doing so ever since 1826, which is quite a long time, as anyone who was born about that time will certify.

#### One-Piece Tools That Won't Break.

Other hammers? Their name is legion. Not only are there standard shapes in special construction, but there are special forms for special classes of work. Of the special construction type there is, for instance, the Spartan hammer made by the Drop Forging Co., Jersey City, N. J. As the picture shows, the hammer is an orthodox ball-pein machinist's hammer in form, but it is made of a single steel drop-forging, handle and all. Obviously, the tool will stand treatment that no wood-handled hammer could live through, and for this reason it is an excellent device to put into the hands of chauffeurs. In addition to its strength, the Spartan hammer has the advantage of combining in its handle a big screwdriver on which tremendous leverage

can be exerted by grasping the head when turning a screw.

The "Perfect Handle" tools made by H. D. Smith & Co., Plantsville, Conn, have become so familiar to most people that no extended description is required. Suffice it to say that their ball-pein machinist's hammer, with one-piece steel head and handle and wood grip to give a comfortable hold is what a mechanic might refer to as "some tool" without overstepping the limits of veracity.

The plumber's calking hammer is a short, heavy tool for getting in hard blows at short range and in restricted positions, and the one shown in the illustration, made by the Buffum Tool Co. Louisiana, Mo.—which also makes so many other tools that it takes a book an inch thick to list them—is typical of the better sort of practice in this line. There are not a few automobile repair jobs where lack of space would make the plumber's calking hammer useful

#### Purposes of Soft Hammers.

Under the generic term "soft hammers" comes a whole list of tools, all being alike in that they are designed to permit more or less heavy blows to be struck on finished metal surfaces without marring. Which is as much as to say that the soft metal of the tool gives way, rather than the harder metal of the object struck. Lead or babbit hammers are often used for very easily marred surfaces; but ordinarily brass and copper hammers are employed, and they have the advantage of standing up much longer than the softer metal tools. When a babbit hammer is all battered up it is melted and re-cast, in many cases, or a new soft filling inserted. In the case of the copper hammer, it is usual to reforge the head when it gets very disreputable in appearance. Brass hammers are not usually quite as soft as copper hammers, and are exceedingly useful. for they will not mar any iron or steel surface, ordinarily. An extremely useful form is that made by the Goodell-Pratt Co., Greenfield, Mass., which makes something less than a million tools of other kinds as well; the hammer is shown in one of the pictures. They are made in various sizes from 2 ounces to a pound, all but the smallest having wood handles; the two-ounce tool has a polished steel handle with knurled grip.

A first-class sort of copper hammer is that made by James Graham & Co., New Haven, Conn., which is shown so clearly in the picture that lengthy description would add nothing. The weights of various models vary from 8 ounces to 6 pounds.

## SIMPLIFIED GEAR SHIFTING WITHOUT AUXILIARY POWER

Gears Selected by Push-Buttons, and Pressing Clutch Pedal Makes Changes-Almost Any Car Can Be Equipped.

Having developed a mechanical gearshifter in which the power of the engine is utilized to shift the gears, the Grand Rapids Show Case Co., Grand Rapids, Mich., now has brought out a much simpler device for the same purpose. While the latest gearshifter resembles the first one in that the gear selection is made in advance by pressure on buttons mounted on the steering column, it differs from the former in that the power of the motor is not used, the actual sliding of the gears being effected instead by the usual movement of the clutch pedal; hence, the mechanism is much less complex.

The accompanying illustration is a plan view of the device attached to a gearcase, the shifter being open to show the parts. The sliding rods by which the gears are shifted are shown at A. A. In this example the gear gives three speeds and a reverse; each sliding rod takes care of two shifts, one on the forward movement and the other on the backward movement.

Two double-armed levers engage the ends of the two sliding rods; one is shown at B, the other, of course, being hidden under it. Each double lever carries two fingers, C and D, one on each side of the pivot. If the finger C is pushed the double-armed lever will move its sliding rod outward, while if finger D is pushed the rod will be moved inward. Thus the two arms and the four fingers provide for the four gear positions.

The requisite push is applied to the fingers by a sliding member E actuated by the clutch pedal through a pin and roller shown at F. There is sufficient travel of the slide so that the clutch pedal moves far enough to disengage the clutch before beginning to act on the gear-shifting mechanism.

The fingers C and D and, of course, the two that are not shown, are controlled and brought into the path of the sliding member E by pressure on the selector buttons mounted on the steering wheel. These buttons are connected to the fingers by rods, one of which only is shown at G. When a selector button is pressed the corresponding rod G is

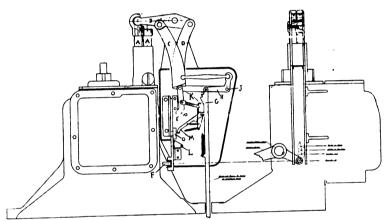
moved in the direction of the arrow. The resulting movement of the lever H, which is pivoted at J, pushes the finger C-or whatever finger it may happen to be-into the path of the slide E, so that when the clutch pedal is operated the movement of the pedal results in the shifting of the desired gear.

When a button is pressed and a rod, as G, moved, it is retained in position by a shoulder that engages the hook K. This holds the selector mechanism in the desired position until the clutch pedal is pressed and the gear shifted, so that the desired gear can be selected and the mechanism set in advance. When the gear is shifted, however, the movement of the slide E brings a pin L against a trigger M, which releases the hook K and permits the rod G and the rest of the selector mechanism to snap back button releases the one first pressed, so that the driver can change his mind as often as he pleases without untoward re-

The makers state that while the drawings show a shifter designed for the three-speed gears more commonly used, the device is equally applicable to fourspeed gearsets. Further, the application can be worked out in whatever way the construction of the car or the peculiarities of the gear may demand, there being considerable flexibility in this important respect.

#### Compares Car to Dog in Defending Law.

The defenders of the motor car law of the State of Michigan, which is now on trial in the United States Supreme Court, made legal comparison between the ownership of a car and the owner-



VANDERVELD MECHANICAL GEAR SHIFTER THAT IS OPERATED BY CLUTCH PEDAL

to neutral position, coiled springs supplying the necessary pull.

When a gear is in mesh and none of the buttons is set for a gear change the clutch can be engaged and disengaged freely without affecting the gears. If a button is pressed, however, and the selector set for a gear shift, it is clear that the first thing that must occur is the returning of the gear already in use to neutral. This is effected by the finger P which is pressed by block O as the slide travels and pushes into neutral any gear that may be engaged, though leaving the finger selected in position for the gear shift. The contact of the slide E with the finger C-does not take place until after the block O has pushed the neutralizer P the requisite distance to bring the gears to neutral. When this point has been reached the neutralizer P is forced out of contact with the block O.

If a button has been pressed to select a certain gear, and it is found inadvisable to use that gear, the pressure of another ship of a dog in arguing the constitutionality of the statute Tuesday, 17th inst. They maintained that since a man is responsible for any damage done by his dog the owner of a car should likewise be held responsible for any damage done by the vehicle. The case was brought by one of Detroit's manufacturers, one of whose testers injured two men and a boy in a horse-drawn vehicle one night; it is charged that the tester was joy-riding.

#### Engineers to Discuss Motor Design.

At the regular March meeting of the Metropolitan Section of the Society of Automobile Engineers, which is to be held Thursday evening, March 26th, at the Automobile Club of America, the subject for discussion will be "The General Trend of American Motor Design." A paper will be presented by W. M. Power, and it is expected that the discussion will bring out many facts bearing on the adequacy of the present-day type of motor for modern requirements.

#### MOTOR WORLD

# NASHVILLE MAN PLANS THE WORLD'S BIGGEST GARAGE

Proposes to Erect Structure to House 1,000 Cars — Largest at Present Holds 600—Would Operate on Cooperative Basis.

If the plans of Dr. Walter W. Page are consummated, Nashville, Tenn., will have the biggest garage in the world. It will be seven stories high, 100 x 180 feet, will cost \$100,000 and, it is stated, will house 1,000 cars. The largest known garage at the present time is that of the Automobile Club of America in New York City, which has accommodations for 600 cars.

The building Page proposes to put up will be operated on a cooperative basis, according to present plans; the site is at 5th avenue and Commerce street and it is planned to have grade entrances on the first three floors, this being possible because of the layout of the streets upon which it is to be located. It will be fireproof throughout and each floor will be equipped with a miniature fire department. It will front 100 feet on 5th avenue and will extend backward 180 feet on Commerce street.

Under the proposed plan of operation each patron will be a profit-sharer and will be taxed \$5 a month for storage; all else will be charged for on a cost basis. A stock of supplies and accessories valued at between \$40,000 and \$50,000 will be carried and even cars, as well as supplies, will be sold at or near cost—at least, the proprietor so plans. Storage will include insurance while the car is in the building, both fire and theft. Cooperative rates will be extended to patrons only.

Dr. Page states that he plans to begin work as soon as the weather will permit and have the building completed by autumn, when he will open it with an automobile show.

### Distributer to Buy Truck Buyers' Notes.

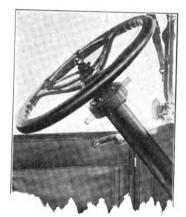
To help its sub-dealers build up a truck business through the use of installment payments, the Gerlinger Motor Car Co., Portland, Ore., has inaugurated a plan whereby it acts as the banker in the deal and buys the notes tendered to the sub-dealers by the buyer of the truck. A nominal service charge is made.

The Gerlinger company, of which E. E. Gerlinger is president, has sub-dealers in Washington and Oregon. In a letter accompanying an explanation of the

plan, Gerlinger states that the new arrangement will permit the sub-dealer to go after the business of the man who does not feel himself in position to pay cash for a truck and will not necessitate the sub-dealer interfering with his bank balance or credit.

#### SIMPLIFIED STEERING COLUMN CONTROL ON STEARNS-KNIGHT

The control of a motor vehicle is such an important feature of design that any attempt to simplify the work the driver must do is commendable, provided the attempt accomplishes its purposes. In the arrangement of the F. B: Stearns Co., Cleveland, O., all of the control elements have been brought to the steering column, where they are virtually beneath the operator's fingers. Outwardly, the



STEARNS COLUMN CONTROL

control apparatus consists of nothing more than a small cylindrical box which is attached to the steering column. From opposite sides of the box two small, flat levers, controlling the amount of air admitted to the carburetter, and the ignition, project. The lighting switches—of the pull and push type—are located at the bottom of the box.

The wires of the lighting circuit are enclosed in a space between the steering column and its casing, running from the pull-and-push buttons on the bottom of the control box into the junction box, which is mounted on the steering column casing just below the floor board. To minimize the number of wires in the casing the "one-wire system" is used.

Raised lettering on the top of the control box directly over each button indicates the lights controlled by that button. This plan is also followed to indicate the positions of the carburetter and ignition system control levers, the former having the word "Rich" at one side and "Lean" at the other.

### BRIDGING AND TUNNELING HUDSON RIVER DISCUSSED

Members of State Commissions Address

Truck Club Meeting — Gigantic

Projects Described and Declared Practicable.

More than ordinary interest attached to the regular monthly meeting of the Motor Truck Club of New York, held on Wednesday evening, March 18, for routine business was formally sidetracked, and the members, together with members of the Electric Vehicle Association of America and others interested in traffic matters, listened to addresses by members of the New York State Bridge and Tunnel Commission and the New Jersey Interstate Bridge and Tunnel Commission, who were present by invitation to describe the proposed bridging and tunneling of the Hudson River. The meeting was held in the hall of the Automobile Club of America.

The project is to build a suspension bridge at 57th street, or a tunnel at Canal street, or both; the cost of the bridge would be \$42,000,000 and of the tunnel—or, rather, tunnels, for twin bores are proposed—\$11,000,00. The feeling of the commissioners was that the expense should be borne equally by the States of New York and New Jersey. It was declared that the engineering problems are not particularly difficult.

Henry W. Hodge, of Boller. Hodge & Baird, engineers for the New York commission, described the proposed bridge of having an enormous span of 2.800 feet, much longer than anything of the kind now in existence; the towers would be 550 feet high, measuring from bedrock foundations, or about 350 feet above the water line. The clearance above the water would be 170 feet, which is 35 feet more than the clearance of the East River bridges. A single-level platform more than 200 feet wide would carry roads and tracks, with sidewalks at the rails. The grade of the New York approach would be less than 3 per cent.. and the New Jersey approach level.

The tunnel proposition was described by G. D. Snyder, of Jacobs & Davies, engineers for the New Jersey commission. The twin tunnels would be 134 miles long, with 17-foot roadways and a height of 14 feet. The maximum grades at the approaches would be 3 per cent. The plans include huge elevators for hoisting direct to the street traffic destined for points on the river front.

#### MOTOR WORLD

# MAKING DISPLAY WINDOW THING TO SEE THROUGH

Boston Buick Man Cleared Off His Glass
Front, but Still Made the Display of His Name Effective
—How He Did It.

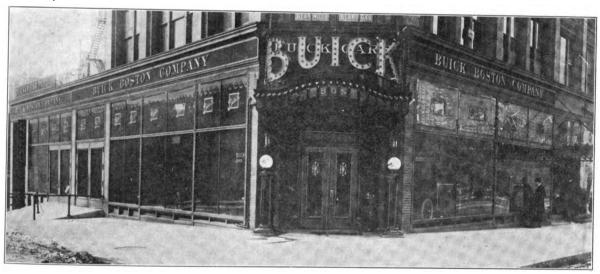
Since the first storekeeper sent for the first sign painter and told him to paint a sign on the store window, signs generally have been painted according to the precedent established by that stone age store proprietor—of varying styles and sizes, but on the window. The depart-

desiring to emphasize the word "Buick" he had a gold square with a blue center painted on each one of the 16 panels in the upper part of his window front, with the name "Buick" as trade-marked by the manufacturer written in the square. The line of "Buick, Buick, Buick, Buick" is effective and striking to the observer.

"Buick Boston Company" he placed in raised bronze letters in three places on two sides of his corner location above the windows; a big illuminated "Buick" over the corner entrance shows up well at night, as do two small pillars topped with frosted electric globes on which again appears "Buick" but in smaller form. The name is made to predominate.

signs are suspended by five link chains. The standards, as illustrated, consist of 3-inch tubing joined in a brass cube at the upper corners and seated in brass plates on the floor. The standards are portable and several signs are used. The fixtures ordinarily are placed in a window at one side of a car, where the message is plain and the cars are not obscured. The fixture of itself is an attraction, whereas the same sign on the window would be an obstruction to view.

During the Boston pleasure car show last week one fixture bore the sign which is illustrated while another carried a statement of the Buick victory in the economy contest held by the New York



SALESROOM WINDOWS OF BOSTON DEALER CLEARED OF LETTERING, BUT NAME BUICK EMPHASIZED

ment stores, which realize the value of windows, have gotten away from it, but many other merchandizers hold to the window sign.

That a big sign on a window obscures the interior and lessens the value of the window for display purposes is especially true in an automobile salesroom, and while much is yet to be accomplished, dealers are moving away from the lettercovered glass front.

One who attacked the problem in a unique way and achieved an effective result is John H. Johnson, proprietor of the Buick Boston Co., Massachusetts avenue and Newbury street, Boston. Johnson's motive was to permit a full view of his salesrooms to the public and still to make it generally understood by passersby that he sold Buick cars.

Accordingly he removed all lettering from the windows with the exception of "Buick Cars" in small type in two places, but where they did not hinder vision. This left the interior in full view. Then.

is not over obtrusive and the desired effect is achieved.

In the way of interior and window signs he has constructed an ornamental standard of brass tubing on which



SIGN DISPLAY STANDARD

dealers last fall. The signs themselves are of dark oak.

#### No More Hour Jail Days in New York.

The speeder whose sentence is "\$25 or one day" in New York City courts can no more save the \$25 by staying an hour in jail; heretofore, some motorists who were arrested late in the afternoon served their "day" by staying in a cell until 4 o'clock, when the business day ends, thereby having served their day within the meaning of the law. The Board of Aldermen has made two days a minimum, so a man can escape payment only by serving at least 24 hours.

#### Narrow Tread Illegal in New Jersey?

New Jersey motorists and others just now are worried over the fact that some one has unearthed an old blue law of 1787 which apparently makes it illegal for any one to operate a narrow tread motor vehicle on the highways. A bill has been framed to repeal the law.



### FIGURES FOR BOSTON SHOW REVEAL LIVELY SELLING

More People, More Sales, More Activity than Ever Before-Cyclecars Make Great Strides-Accessory Men Do Good Business.

The Boston show has made new figures: it has impressed itself upon motor car makers as the real selling show of the season; rumors of a discontinuance of the show have ceased; and dealers are seeking admission to the Boston Dealers' Association. Attendance figures so far available show that the 250,000 mark of 1913 was exceeded. On Society day, when the admission was doubled, the attendance ran up to 45,000, and the number was still greater the following day.

Actual sales for the week will total about 1,000 cars, most of them small machines, of course. The Motor World man found sales lively in every direction. The National people sold 89 "sixes"; 16 Oaklands were ordered before Wednesday; by Thursday night 30 Hudsons had been sold; a Ford man stated that 102 cars had been sold up to Friday noon: 6 Pathfinders found buyers: Chalmers business was better than last year, and Jeffery cars moved briskly. Among the big cars the average was about two a day, which is considered good business. The lists of prospects gathered in were big and promising in proportion.

The cyclecars proved popular. No less than 14 makes were represented-Durvea, Merz, Trumbull, Bantam, Salvador, Economy, Euclid, Laconia, Twombly, Mercury, Lavigne, Imp, Dudley and Cricket. An indication of the interest the little cars created is found in the fact that whereas a few weeks ago there was but one agency in Boston, all the 14 mentioned have signed up for the Hub and vicinity. Enough orders are reported to keep the factories hard at work filling them.

The "first come, first served" rule that was in force this year with reference to the apportionment of space for accessories delighted the accessory men, who report splendid business. A pump manufacturer who paid \$70 for his space stated that he took orders at the show representing more than \$900 worth of business

A feature of the show that particularly pleased the dealers was that an unusually large number of out-of-town

prospects not only visited the various exhibits, but got right down to business and placed their orders. Of course, a considerable volume of such trade is expected, but this time expectations were considerably exceeded.

Boston Opens Commercial Car Show.

The Boston motor truck show, the one big commercial vehicle exhibition of the season, opened on Tuesday evening, March 17, a day earlier than usual, with an impressive display made by 37 exhibitors of machines of all sorts and sizes. The early opening was made possible by the fact that the police commissioner gave permission for the exhibitors of pleasure cars to move their machines out on Sunday-something that has not been permitted heretofore. Some of the pleasure cars were moved Saturday night after the closing, and all were out by Monday noon. The truck show will remain open until Saturday night, March 21.

#### New Finish for Shabby Small Cars.

By way of making it inexpensive and comparatively easy for the owner of a Ford or other small car to bring his machine out for the summer in a fresh, new dress of paint and varnish, the Northwestern Chemical Co., Marietta, O., has placed on the market a complete outfit for refinishing such a machine from bumper to tail-light. Paint and varnish for the body, fenders and hood, special finishes for the dashboard, the lamps, the brass-work and the engine, top and cushion dressing and the necessary sandpaper and brushes are included in the outfit. A choice of six colors is givenred, blue, green, orange, tan or grayat a list price of \$5.75. If both body and chassis are to be finished in black the list price is 75 cents less.

#### Goodyear Revises its Solid Tires.

A number of changes have been made in the 1914 tires manufactured by the Goodyear Tire & Rubber Co., Akron, O. The solid demountable tire has a flat instead of a round tread to improve traction. The side-flange detachable, made in sizes 4 inches and under, is made higher to give greater wear, and also has had its tread changed from round to flat. The cushion demountable tire, used in fire department work, now is offered to the trade generally; it is a comparatively high-priced tire for fast, hard service. The Goodyear individual block tire, in which any one block can be removed without disturbing any other block, is offered without mate-

### **NEW HAVEN DEALERS PLAN WEEK OF TRADE BOOSTING**

Parades, Mardi Gras, Banquet and a 'Bus that Carries Public from Salesroom to Salesroom -The Program.

Thirty automobile and accessory dealers in New Haven, Conn., have united in an Automobile Week which will savor a little of a show but which will be, in reality, more of a carnival. It will begin Monday, March 23, and last until Saturday, March 28. Salesrooms will be decorated, parades will be held, and the public generally will be reminded that spring is at hand and that the town has a live aggregation of motor car trades-

Newspaper advertisements and pennants on cars and elsewhere are giving the affair publicity and a busy and entertaining week is planned; a passenger motor 'bus will make a regular route around town from salesroom to salesroom and from accessory store to accessory store, making it easy for the public to get acquainted with the "row."

Monday, the first day of the demonstration, the dealers will participate in a daylight parade through the business section of the city, starting at 2 o'clock in the afternoon and displaying nothing but 1914 cars.

Tuesday and Wednesday will be lively days, and Thursday evening a general parade with Mardi Gras features will be staged; prizes have been offered for various special features, and this event is calculated to be the culmination of public interest.

Friday evening the dealers will gather in the Hotel Taft at a trade banquet: out-of-town tradesmen will be present and several prominent manufacturers will speak. C. M. Bradford, the secretary of the Committee on Arrangements states that the dealers apparently have struck a popular chord, and the "week" is expected to develop many of the advantages of a show with benefits which a show could not produce.

### Paige-Detroit for Army Use.

After a careful consideration of specifications and analysis of six makes of cars, the United States government has placed its order for a Paige-Detroit roadster for the use of Lieut. Kennet. Chicago army recruiting officer of the United States army. The car has been ordered for immediate delivery.

### DES MOINES' FIFTH SHOW BENEATH GOLDEN CANOPY

Colored Lights, Mission Decorations and Marker Lamps Add to Attractiveness—Crowds Flock to View Exhibits of 25 Dealers.

Des Moines, which is in Iowa, has just closed its fifth annual show, the curtain having been rung up on the function on Monday night, 9th inst., by the Des Moines (Ia.) Automobile Dealers' Association and down again on the 14th; the show was under the Coliseum roof. During the whole of the time that the show was open the aisles were crowded. For the occasion, the Coliseum was elaborately decorated, an enormous golden canopy serving as the piece de resistance. Colored lights helped to give an air of beauty and the brightness was set off by heavy mission standards supporting mission lamps which marked the various display spaces.

More than 25 dealers in vehicles displayed their wares, the list including some 33 different makes. Among those who exhibited were the following:

Means Auto Co., Herff-Brooks, Moon and Marathon; Iowa Automobile & Supply Co., Chalmers and Saxon; Kruideneir-Cadillac Co., Cadillac; Ideal Automobile Co., Oakland; Capital City Carriage Co., Jackson; Clemons Auto Co., Overland; Johnstone Motors Co., Detroit electrics; J. I. Case T. M. Co., Case; Ford Motor Co., Ford; Brown-Corley Motor Co., Maxwell; Sears Auto Co., Reo and Mitchell; Cole Motor Co., Cole; Bernhard & Turner, Rauch & Lang electrics; Des Moines Motor Car Co., Studebaker; White Motor Car Co., White; Des Moines Imperial Co., Imperial; Des Moines Jeffery Co., Jeffery; Payne Motor Co., Paige-Detroit and Lozier; Hawkeye Auto Co., Apperson: Oldfield Motor Co., Chevrolet; Robinson & Co., Allen and Krit; Lagerquist Carriage Co., Haynes; Holsman Sales Co., King; Stitzel Electric Co., Broc electrics; Central Iowa Motor Co., Hupmobile.

#### Pittsburgh to Ban Downtown Parking.

If an ordinance which now is being prepared by the Pittsburgh (Pa.) city authorities is enacted into law, it no longer will be possible for motorists to leave their cars standing in the downtown thoroughfares. The police department has succeeded in convincing Public Safety Director Charles S. Hubbard that

the parking of cars in this way is a nuisance and a menace to property in case of fire; hence it is proposed to enforce the use of several large open tracts of land for the purpose.

#### Road Classics for Los Angeles?

Santa Monica may not get the 1915 Vanderbilt Cup and Grand Prize races after all. It is beginning to look, in fact, as if the Western Automobile Association and the Santa Monica Bay Chamber of Commerce would part company and that the 1915 races will be held on an 8-mile course in the vicinity of Los Angeles.

Whatever difficulty there is seems to have been brought about by the alleged statements of Mayor Dudley that Santa Monica is quite big enough and strong enough to handle the races without the help of the Los Angeles contingent. And as a result, Chairman Shettler is said to have declared that he would shortly open negotiations to obtain a suitable course on private land near Los Angeles. It would seem as if Santa Monica could get along without the Western Automobile Association, whereas the latter, with all the prestige it has obtained, easily could find some other course just as good as Santa Monica. It is thought, though, that the Santa Monica Mayor will be made to see the error of his ways by his fellow citizens and that the present storm will prove but a tempest in a teapot.

#### Swedish Trials to Knight-Engined Car.

For the third time, the Swedish Winter Reliability Trials, which were held February 8th to 21st over a heart-breaking route from Stockholm to Gothenburg and return over different roads, was won by a Knight-engined car. A Minerva-Knight, driven by Osterman, finished without penalization. Of the 61 competitors who started, but 20 succeeded in reaching the finish line, and Osterman was the only driver to finish with a clean slate. The others who finished, together with their penalizations, were as follows:

Minerva (Osterman) 0, Horch (Raaf) 33, Horch (Paulmann) 36, Hupmobile (Hogman) 43½, F. I. A. T. (Brambeck) 48, Minerva (Enderlein) 59, Opel (Eklund) 67, Dessauer (Larson) 90, Cadillac (De Mare) 103, Adler (Hageselle) 211, Overland (Holmer) 275, Adler (Nilson) 323, Horch (Stjernsward) 537, Chandler (Nervo) 692, Scania-Vabis (Backdahl) 2,554, Napier (Lindstrom) 2,593, Winner of Winter Cup.—N. A. G. Darling (Karlsson) 60, Studebaker (Goeringer) 83, Stoewer (Stamm) 174, K. R. I. T. (Djursson) 1068.

# HARRISBURG DEALERS' SHOW DRAWS LARGE ATTENDANCE

Exhibit Larger than Ever Before, Including 27 Makes Shown by 17 Dealers—Doors Remain Open for One Full Week.

Harrisburg's fifth annual automobile show, which is housed in the Arena-Rex building, was opened on Saturday night. 14th inst., under the auspices of the Harrisburg (Pa.) Automobile Dealers' Association and will hold the boards until Saturday night, 21st inst. During the first few days of the show the attendance exceeded all expectations, which is due in a large measure to the fact that the show itself is considerably larger than it has been in years gone by. All told. there are 17 exhibitors of vehicles, whose spaces includle 27 different makes of pleasure and commercial vehicles. In addition there are six exhibitors of accesssories and several of motorcycles. The complete list of exhibitors is as follows:

Harrisburg Automobile Co., Reo, Haynes, National, Reo and Chase trucks; Keystone Motor Car Co., Chalmers, Studebaker, Saxon; I. W. Dill, Hudson, Krit; Crispen Motor Car Co.. Cadillac; Andrew Redmond, Overland, Autocar; West End Garage, Jeffery, Marathon; Bowman & Co., Cole; Paul D. Messner, Stanley; Abbott Motor Car Co., Abbott-Detroit; Oakland Motor Co., Oakland; W. F. Grove, Pullman; Ford Sales Co., Ford; Miller & Alter, Maxwell: E. M. Hottenstein, Buick, Chevrolet: J. I. Case T. M. Co., Case: Monn Bros., Metz: Morton Truck & Tractor Co., Morton; Atlantic Refining Co., oils and greases; Sterling Auto Tire Co., Miller tire and tire repairs; Keystone Lubricating Co., oils and greases; Eureka Wagon Works, Simplex shock absorber; Quartette Sales Co., Quartette automobile signal, S. & M. ignitor; Wm. S. Essick, insurance, Pyrene fire extinguisher.

#### Successful Week for Fort Dodge Show.

With the exhibits of more than a score of local dealers in place in the city armory, the Fort Dodge (Ia.) Automobile Dealers' Association was opened on Tuesday, 3rd inst., and, after an unsually successful week, was brought to a close the following Saturday night. All told, there were 23 different makes of pleasure cars on view, including a number of cut-out chassis.

March 19, 1914



-Stutz Auto Co., under New York laws; authorized capital, \$10,000. Corporators-C. E., M. A. and A. E. Graves.

Toledo, O.-Associated Motor Sales Co., under Ohio laws: authorized capital, \$1,000. Corpora--Edwin F. Miller, Bernard Rubert and Harvev S. Carn.

Salt Lake City, Utah-Apperson Motor Car Co., under Utah laws; authorized capital, \$15,000. Corporators—1. H. Bacraft, Alfred W. Schooler and G. F. Horn.

Toledo, O.-Howard Carbon Co., under Ohio laws; authorized capital, \$50,000; to manufacture brushes to be used electrically on automobiles and electric lighting systems.

Mansfield, O.-Ohio Tire Co., under Ohio laws; authorized capital, \$1,000. Corporators D. Herring, Jacob Heinhart, Norris Kirkpatrick, Henry G. Brunner and Geo. W. Herring.

Biddeford, Me.-Rylander Mfg. Co., under Maine laws; authorized capital, \$400,000; to manufacture, sell and deal in motor vehicles of all kinds. Corporators-J. A. Snow, Scarboro; F. R. Ross.

Springfield, Ill.-Merchants' Motor Truck Mfg. Co., under Illinois laws; authorized capital, \$100, 000; to manufacture motor trucks, etc. Corporators-Wm. Schulze, Joseph W. Misek and Clayton A. Martin.

Boston, Mass.-Blair Mfg. Co., under Massa chusetts laws; authorized capital, \$1,000,000; to manufacture motor cars. Corporators—M. A. Daniher, E. T. Roche, both of Boston; J. B. Lazenby, Lynn.

Montreal, Can .- Canadian Baby Car Co., Ltd., under Canadian laws; authorized capital, \$300,-000; to manufacture motor cars, motorcycles, etc. Corporators-Napoleon Nanetl, Joseph A. Mayette and others.

Camden, N. J .- Holl Motor Carriage Co. der New Jersey laws; authorized capital, \$125,-000; to manufacture motor cars, motorcycles, Corporators--A. H. Holl, H. C Emery and Lewis F. Holl.

Montreal, Can.-Chapleau Wagon & Auto Co., under Canadian laws: authorized capital, \$100,000; to manufacture motor cars, wagons, etc. Corporators-Frederic H. Chapleau, Jos. A.

Trenton, N. J .- Fisk & Dunham Rubber Co., under New Jersey laws; authorized capital, \$50,-000; to manufacture rubber goods. Corporators-F. Fisk, R. C. Dunham, Trenton; A. A. Taylor, Allentown, Pa.

Chicago, Ill. -Conklin Spindler Auto Co., under Illinois laws; authorized capital, \$2,000; to buy. sell and deal in motor cars, motorcycles, etc. Corporators—Alva L. Spindler, Maurice Kohn and Charles E. Conklin.

Freeport, N. Y .- Long Island Tire Co., der New York laws; authorized capital, \$1,500; to deal in automobile tires, etc. Corporators-Marie P. Denton, J. S. Denton and Harry E. Wetzig, all of Freeport.

Minneapolis, Minn.-Clark Auto Co., Minnesota laws; authorized capital, \$25,000; to operate a garage and later also deal in motor cars. Corporators-Frank C. Clark, Clem Bofferding and John A. Cronholm.

Terre Haute, Ind.-Union Sales Association, under Indiana laws; authorized capital, \$5,000; to deal in machinery, motor cars, etc. Corporators-J. R. Finkelstein, Terre Haute; G. C. Buntin and H. D. Hughes.

Little Rock, Ark .- O. D. Tucker, IV., & Co. under Arkansas laws: authorized capital, \$10,000; to deal in motor cars, tires and accessories. -O. D. Tucker, IV., Eugene C. Wallace and Russell V. May.

Columbus, O .- Columbus Automobile Trade Association, under Ohio laws; authorized capital. E. Avery, J. P. Gordon, A. B. Coates, W. J. Miller and L. M. Browne.

Bronx, N. Y.—Israel & Stanke Auto Renting Co., under New York laws; authorized capital, \$3,000. Corporators—Norman Israel and Blanche of 1037 Teller avenue; Robert A. Stanke, 312 East 163rd street.

Milwaukee, Wis.-II. L. Hadden Co., Wisconsin laws; authorized capital, \$15,000; and supplies. to deal in motor cars, accessories Corporators-E. G. Hadden, N. M. Kent, E. J. Kappelman and H. L. Hadden.

Charlotte, N. C .- Charlotte Motor Car Co., nder North Carolina laws; authorized capital, \$16,000; to conduct a general automobile and garage business. Corporators—George Fitzsimmons, T. S. Tredenick and others.

Lockport, N. Y.-Lockport Auto Supply Co., nder New York laws; authorized capital, \$5,-000. Corporators-Arthur L. Hoag. 208 Washburn street; John R. Jelley, 278 Prospect street; Edward H. Huber, 13 Ontario street.

Cincinnati, O .-- Court Street Garage & Automobile Co., under Ohio laws; authorized capital, \$20,000; to conduct a general automobile and garage business. Corporators--M. A. Beor, Emil A. Hauck and John H. Ahlbrandt, Jr.

Minneapolis, Minn.-Tire Supply Association, under Minnesota laws; authorized capital, \$50.-000; to deal in tires and automobile accessories. Corporators—M. J. Rosenstein, L. S. Rosenstein, A. W. Juster and Lewis Rosenthal.

Rochester, N. Y .-- Motor Car Service Station, York laws; authorized capital, \$1,-000; to deal in gasolene, oils. tires, etc. Corporators—Wm. D. Elliott, Jos. K. Elliott, and Wm. R. Gilman, all of 632 Granite Building.

Camden, N. J.-Inter-State Auto Supplies Co., under New Jersey laws; authorized capital, \$300,-000; to manufacture rubber goods. Corporators—F. R. Hansell, Philadelphia; G. H. B. Martin and S. C. Seymour, both of Camden.

Milwaukee, Wis .- Milwaukee Cycle Car Co., under Wisconsin laws; authorized capital, \$75,-000; to manufacture cyclecars and other similar light motor vehicles. Corporators-Charles J. Eigel, Stanley Eigel and Samuel P. Carrill.

Springfield, Ill.-Cyclecar Manufacturers' National Association, under Illinois laws; to foster interest of those engaged in the manufacture of cyclecars, light cars, etc. Corporators-Wm. B. Stout, John C. Long and James S. Stephens.

Minneapolis, Minn.-Yale Motor Car Co., under Minnesota laws; authorized capital, \$20,000; to deal in motor cars and conduct a general garage and repair business. Corporators-N. F. and R. L. Oslin, Hawkin Olson and G. A. Nelson.

Chicago, Ill.-Huma-Swan Co., under Illinois laws; authorized capital, \$100,000; to manufacture, buy, sell and deal in automobiles, cyclecars, machinery, etc. Corporators---Charles C. George, F. Huma and Willis A. Swan, all of Chicago.

Cleveland, O.-Cleveland Coil & Mfg. Co., under Ohio laws; authorized capital, \$10,000; to manufacture motor and dynamo coils. Corporators-II. L. Carleton, Owen N. Wilcox, Charles A. Norris, Geo. W. Bach and Geo. A. Shivley.

Wilmington, Del.-Argo Motor Co., under Delaware laws: authorized capital, \$750,000: to manufacture motor cars, engines and machinery. Corporators-L. E. Latta, New York, N. Y.; W. J. Maloney and H. E. Latta, both of Wilmington

St. Louis, Mo.-Crescent Motor Car Co., under Missouri laws; authorized capital, \$50,000; to manufacture, repair, buy, sell and deal in motor cars and accessories. Corporators-George A. Root, Albert G. Neilson, Jr., and William H. Fos-

Portland, Me.-American Electric Car Co., mder Maine laws; authorized capital, \$1,500,000; to manufacture and deal in motor cars and parts Corporatorsthereof, machinery, tools, etc. A. Brand, Cleveland, O., T. Huss, Saginav. Mich

Chicago, Ill.-Merchants' Motor Truck Mfg. Co., under Illinois laws; authorized capital, \$100. 000; to manufacture and deal in motor trucks. vehicles, motor cars, etc. Corporators-W. Schulze, J. W. Misek and C. A. Martin, all of Chicago.

Montreal, Can.-Motor Finance Co., Ltd., un der Canadian laws; authorized capital, \$50,000; to manufacture motor cars, engines, etc. Corporators—Adalphe Kornbloom, New York, N. Y.: Edwin N. Todd, Edwin A. Mumford and others. of Montreal.

New York, N. Y .- Engel Crude Oil Engine Co., under New York laws; authorized capital. \$15,000. Corporators—Henry Engel, 141 May. flower avenue, New Rochelle; Winfred L. Smith. 163 Center street, Orange, N. Y.; John M. Mumford Riverdale, Md.

Hoboken, N. J.—Hoboken & North Hudson Auto Bus Transportation Co., under New Jerky laws; authorized capital, \$125,000; to conduct a general motor transfer, express and transporta-tion business. Corporators—W. O'Neill, W. A. Kavanagh and E. F. Martin, all of Hoboken.

Wilmington, Del .-- Broderick Inner Trbe Pro tector Co., under Delaware laws; authorized capital, \$500,000; to manufacture automobile and b cycle tires, inner and outer tubes. Corporators-W. C. Arnold, Landsdowne, Pa.; M. R. Mac Germantown, Pa.; J. M. Setterfeld. Dover.

Dunkirk, N. Y .- Empire Axle Co., under New York laws; authorized capital, \$20,000; to marufacture automobile axles, accessories, etc. Lor porators—Otto F. Hakes and Zella R. llakes, both of 197 Seminole avenue, Detroit, Mict. E. DeHaven Caldwell, 94 West Fourth street. Dunkirk.

Changes in Capitalization

Chicago, Ill.—Saxton Motor Co., from \$5.00 to \$10,000

St. Louis, Mo.-Percival Auto Repair Co., from \$2,000 to \$6,000.

Dayton, O.—Dayton Rubber Mig. Co. from \$150,000 to \$1,000,000.

Chicago, III.—American Rotary Valve Co. Por \$750,000 to \$1,000,000.

Detroit, Mich.--American Motor Truck (c from \$5,000 to \$50,000. Buffalo, N. Y.-Buffalo Automobile Station

from \$10,000 to \$75,000. Cleveland, O.—Baldwin Forging & Tool Co

from \$100,000 to \$5,000.

Cleveland, O.—Globe Machine & Stamping Co. from \$25,000 to \$100,000.

New York, N. Y.—Duplex Engine Governor Co., from \$150,000 to \$175,000.



in Selling Automobiles

There is an age worn platitude that looks don't count. But the truth of this can only be comparative. A plow may be just as useful if it is ugly, and a man may be a winner even if he is not handsome, but every dealer knows that good looks are absolutely essential in motor cars. Suppose you have two cars of equal quality; now if one of these is far better looking than the other you know the beautiful car will outsell the other.

#### National Quality Acknowledged

Every one admires the National car when it comes to real service. "Runs well—wears well and long—holds up and is always sure and capable. Fourteen years of manufacturing experience is behind the National. Think fourteen years of success of this winning line of cars, how it still holds of the years of success of this winning line of cars, how it still holds world's contest records and how National owners come back to us when they want new cars. There is no informed person who does not admit the National's quality.

#### Looks That Add Comfort

In "looks" we don't believe there is a single car on the market today that is more striking and appealing than the National.
The long low stream line design; the charming finish; the smart slope from cowl to radiator; the clear running boards; the general air of refinement

and perfection in every little detail. And these beautiful effects actually add comfort and convenience to the passengers. Add to the other good qualities the special National cantilever springs and you have unusual riding comfort.

#### National Dealers Are Prosperous

Line up your competitors' cars in a row, let a prospect then stand before the entire array of machines and see how quickly he will select the National. Why? Even without going further than the appear of the eye, the prospect is won over to the National. This is the dealer's first 'trick." Then when your prospect begins to learn of the real honest value, the wonderful stamina and sureness of the car's actual makeup, the it is that you "trump" your competitors. Remember, car owners want to deal with a concern with a good reputation. There is none better than—

### The National Motor Vehicle Co.

Indianapolis, Indiana

"You Don't Have to Raise the Hood"

# VEEDOL

### Will Be Your Best Business-Builder

A proven oil made from Pennsylvania petroleum, the result of our 30 years of experience with every kind of lubricating oil.

We have tested it not only by every method known to modern science, but also in actual service under the severest conditions in every standard type of car.

VEEDOL will give satisfaction; it will bring in the repeat orders, because your customers will find that it affords the most nearly perfect lubrication with the least carbon deposit.

We do not claim that VEEDOL will eliminate ALL friction; that as it burns it will deposit absolutely no carbon—there never will be a PERFECT lubricating oil.

VEEDOL is the most nearly perfect that has ever been produced. Its gravity, viscosity, flash and fire tests; its lubricating value at operating temperatures, make it the ideal internal combustion engine lubricating oil. Car owners will learn these facts as soon as they give VEEDOL a trial. They will be asking for it everywhere. All your customers will be talking about VEEDOL.

We want a responsible representative in every automobile center of the country. There's a big business opportunity for you if there is no agent in your vicinity. Write at once for particulars of our new selling plan. We back up our representatives with the most intensive consumer campaign ever put in operation for a lubricating oil.

Platt & Washburn Refining Co.

5 Broadway New York City

Incorporated 1885



They
Are All
Beating
the Big
Base
Drum

The



#### STORAGE BATTERY

is the Leader and the drummers all want the job.

But a big noise does not produce harmony, and harmony is a quality necessary to

everything that is good.

The absolute harmony of elements required in a satisfactory storage battery has never been so carefully worked out or brought to such a state of perfection as is found in the LBA.

That's why Storage Batteries are used as standard equipment by over 100 manufacturers of automobiles on which Electric Starting and Lighting Systems are installed.

#### 166 Real Service Stations in the United States and Canada

protect (1384) users and are positive insurance of long life and satisfactory, uninterrupted storage battery usefulness.

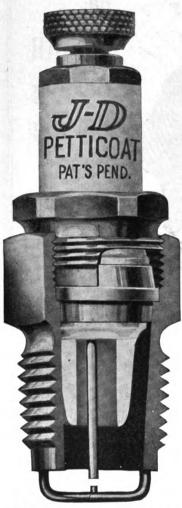
### CLBAS WILLARD STORAGE BATTERY CO., CLBAS

New York Branch: 136 W. 52nd St. Cleveland, Ohio Detroit Branch: 736-740 Woodward Ave.
Chicago Branch: 2241 Michigan Ave.
Indianapolis Branch: 438 and 439 Indiana Pythian Bldg

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

(92)

# A Complete Line—a Plug for Every Type of Motor—a Price for Every Purse



This 75-Cent Plug Especially Is the Salvation of All Oily Motors.

It is the *J-D* Petticoat with closed end of improved design, which not only adds stability to the entire plug, but makes it especially desirable and servicable where an excess of oil is used.

Besides, the porcelain is made in the Jeffery-Dewitt potteries of imported clays blended by a secret process. It will withstand any voltage.

#### For Ford Cars

this plug is almost a necessity, guaranteed not to foul or crack. It gets all the good out of the motor.

Licensed under Canfield Patent.



Registered, U. S. Patent Office.

SOONER or later—every man with a balky motor becomes a **J-D** patron, for **J-D** plugs are the standard cure for over-oiled and dirty engines. There is—in the **J-D** line—a type for every kind of motor, for every ignition defect, for every motorist's preference for every pocket-book.

# 75c. to \$2.00

Motors are like human beings—they are all different; and nobody ever gets the best out of his motor until he uses the particular plug it needs. It is wonderful what a difference the right type of plug makes—and the *J-D* line has a type for every variety of motor.

The result is that every dealer who handles the *J-D* line becomes an ignition specialist—he gets the pick of trade, and holds it.

J-D plugs include the famous Reliance that "sparks in water"—\$1—for motorboats; the "Visible Gap" that instantly locates ignition troubles—\$1; the Conical and Petticoat, open or closed end—75 cents; or with sparking points of solid platinum-iridium—\$1.25; also the Motorcycle standard—\$1—the finest plug ever manufactured for this purpose; and special Heavy Duty and Double Series types of especial merit.

Write for our popular free illustrated book "Spark Plug and Ignition Talk." Learn what this complete line offers you in sure profits.

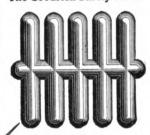
Jeffery-Dewitt Company
65 Butler Avenue Detroit, Michigan

Licensed under Canfield Patent.



It's the Tough Goodrich Safety Tread that Prevents Tough Luck

The Goodrich Safety Tread



Five Bars and a Crosstie the "Safety First" Symbol

Just the unit-group of bars and crosstie to grip the road and distribute jolts and strains evenly, so that the Safety Tread runs like a smooth tread and gives longer wear and service.



This picture from a photograph shows how the Goodrich Safety Tread Tires on the rear wheels overcame the skid of the smooth tires on the front wheels.

# Goodrich Safety Tires

Best in the Long Run

The thick, tough Goodrich rubber fingers of the Safety Tread dig down and grip the road. They stop the skid. They make the brake effective and steering sure.

Goodrich quality in the tire backs up the Goodrich Safety Tread.

The extra thickness of tough Goodrich rubber in the treads at the point of contact with the road gives you longer wear and lower-cost mileage.

Here are the prices to pay for the best tires ever produced in the Goodrich factory:

Size	Smooth Tread Prices	Safety Tread Prices	Grey Inner Tube Prices	517.0	Smooth Tread Prices	Safety Tread Prices	Grey Inner Tube Prices
30 x 3 30 x 3½ 32 x 3½ 33 x 4	\$11.70 15.75 16.75 23.55	\$12.65 17.00 18.10 25.25 26.05	\$2.80 3.50 3.70 4.75 4.90	34 x 4½ 35 x 4½ 36 x 4½ 37 x 5 38 x 5½	\$33.00 34.00 35.00 41.95 54.00	\$35.00 36.05 37.10 44.45 57.30	\$6.15 6.30 6.45 7.70 8.35

Dealers almost everywhere have Goodrich tires in stock or can get them for you from one of our branches or depots.



Factories: All Principal Cities Principal Cities



There is nothing in Good rich Advertising (Inalism's) in Good rich Goods

# MOTOR WORLD

The Dealer's Paper



The Publication Serves
the Manufacturer Best
Which Helps
the Dealer
Most.

LL advertising is an effect an influence. In the automobile business, any advertising campaign that is not designed to have a strong dealer effect and a strong influence upon the trade is poorly, even thoughtlessly planned and will fall far short of what it might have accomplished. This is so because advertising effort must go before and parallel to selling effort, and trade advertising should be your intimate personal connection with your actual or potential selling force.

# Motor World is the Dealers' Favorite Trade Paper

because it helps them, and by so doing gives double the influence to its advertising, logically.

Advertising is done for effect. Dealer effect advertising should be done in the dealers' paper.



# How Quality Is Built Into Detroit Electric Motors

In the "Silence Room" of our factory, every Detroit Electric Motor—we build our own motors —is subjected to the most severe and far-reaching tests known in electric car building

Here each Detroit Electric Motor is attached to the rear mechanical system and set in motion. Our experts are the judges—and they demand 100 per cent silence. They vary the speed of the motor,

ever listening and examining for the slightest noise, which is but another term for imperfection. It is the result of friction that ought not exist; it indicates defect in material or construction.

No motor that fails to run with absolute silence gets by these experts. No motor that develops even the slightest noise is granted immunity. The conditions are exacting: the standards set are high—in keeping with our rigid inspection system. This inspection insures longer life and higher efficiency from every Detroit Electric car; and a maximum of satisfaction and service to Detroit Electric owners at a minimum of expense and annoyance.

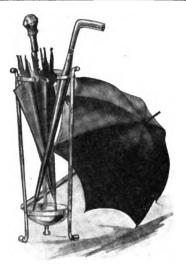
Ask for our catalog which states in greater detail how the Detroit Electric leads all in quality, in new features, in range of choice. Write also for information about our opportunity to dealers.

ANDERSON ELECTRIC CAR COMPANY Detroit, Mich.

Builders of the Detroit Electric

World's Largest manufacturers





# Who Ever Heard of a Rubber Umbrella?

aidlau\_

HE functions of an umbrella and an automobile top are almost identical. The purpose of each is the same, yet there is no such thing as a rubber umbrella. Is there any good reason why there should be rubber in an automobile top cloth, except as mentioned in

our previous announcements that such cloths have been make-shifts pending the advent of a perfect automobile top cloth.

An umbrella is made of one piece, single thickness cloth, free from all chemical compositions, yet it affords complete protection.

Laidlaw Burbank Motor Cloth is one solid piece of cloth free from rubber or artificial leather compounds. There is nothing in Burbank to dry out, crack, decompose, peel, blister or rub off. These weaknesses do and always will exist in rubber interlined or artificial leather surface-coated cloths.

An umbrella is an extremely practical article which opens conveniently and folds compactly, and

a good one will give excellent service for years. All because there is nothing chemical about it to be affected by heat or cold or long continued folding.

Laidlaw Burbank Motor Cloth possesses every one of the features and characteristics of a perfect top material, and retains them under the most severe and trying conditions, for a period of time longer than the life of the car.

# The Laidlaw Company, Inc.

126-132 West 46th Street

New York, N. Y.

# Where does the lost power go?

The **electrical** loss in any starter is from 15 to 30 per cent. That appears as heat.

But the combined electrical and frictional losses, in high-speed geared starters, often exceed 50 per cent. Where does the 20 to 30 per cent. of frictional loss go?

Most of it is spent in wearing out the gears. No small train of gears can absorb so much power without rapid wear.

If the cranking speed of your engines is lower than it should be (considering the current used)

## Look at the gears!

If the grease is black and gritty you will know where the lost power has gone.

But what should the cranking speed be?

The accompanying diagram shows what it is, using the Rushmore Starter, Model C, with 100 amperes on free-running engines of the horsepower shown.

If your starter takes a greater current or gives a slower speed, the differ-

ence is due chiefly to the friction of the intermediate gears. The Rushmore Starter has no intermediate gears.

The Rushmore Starting and Lighting System is factory equipment on the following cars:

Simplex Knox Stafford Lancia Crane Alco Mercer Regal Kline Fiat (American and Foreign) Bianchi Isotta-Fraschini DeDion-Bouton S. & M.

It is also regular equipment in America on:

Mercedes Delaunay-Belleville Austrian Daimler

Rushmore Dynamo Works, Plainfield, N. J.

LONDON BERLIN BE

# Why "Hobble" Your Salesmanship!

When you confine your efforts to the sale of one or two pleasure car models you are "hobbling" your salesmanship.

When you sell this make of "Four," that make of "Six" and still another make of trucks, you are handicapping yourself, because

you must either advocate opposing principles of construction or remain silent on important points.

With the KisselKar line, you have an ideal proposition, a varied line that appeals to all classes of high grade trade, enabling you to exercise your ability and energy to the fullest and at the same time affording you a consistent selling talk.

# KISSELKAR

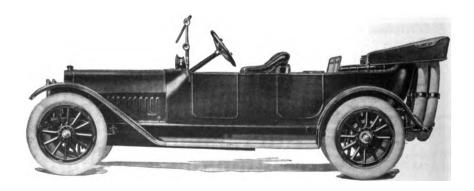
You have in the KisselKar line three chassis models in passenger cars—the 40 "Four" retailing at \$1,850, the 48 "Six" at \$2350 and the 60 "Six" at \$3150. There are no better values on the market.

Then you have a year around field for your selling skill in KisselKar Trucks. There are six chassis models, used in more than 200 lines of business.

Back of this varied line stands a sound and successful concern, one which advertises liberally and whose product is favorably known all over the civilized world.

Investigate the KisselKar agency contract before you consider a new connection. You will be as delighted with the details as with the product itself.

Kissel Motor Car Company, 159 Kissel Ave., Hartford, Wis. BOSTON, NEW YORK, CHICAGO, MILWAUKEE, KANSAS CITY, MINNEAPOLIS, ST. PAUL, DALLAS, SAN FRANCISCO, LOS ANGELES: OAKLAND, Philadelphia, Detroit, Houston, El Paso, New Orleans, Washington, Baltimore, Nashville, Duluth, Buffalo, Pittsburgh, Hartford, Conn.; New Haven, Albany, Troy, Rochester, Providence, St. Louis, Marshall-town, Iowa; Omaha, Hastings, Neb.; Madison, Montreal, Quebec, Toronto, Winnipeg, Calgary, and 300 other principal points



# The Ames Equalizing Spring

does everything the word absorber implies and many things shock absorbers fail to do—

That hard bump—beyond the limits of a shock absorber. The racking series of shocks too fast for a shock absorber. Body-sway—pitching—vibration are all devoured and eliminated simply and efficiently by the



# AMES EQUALIZING SPRING

The Ames spacing block is the secret.

The car spring cushion compression and the Ames cushions resultant recoil.

The Ames is ideal as standard equipment and will be furnished to your spring specifications, built under license by your spring maker and delivered assembled with your spring.

Let us tell you more about this. Write to-day.

# CLARENCE N. PEACOCK &

Dept. O

CO., Licensees 5986 Center Ave. Pittsburg, Pa.

1790 Broadway New York, N. Y.

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# Quality Tires and Tubes

## Business Opportunities For Live Tire Dealers

#### Dealers:

If you will feature Fisk Pure Fine Para Tubes opportunities to increase your business will surely follow.

Every motorist wants the greatest tube value obtainable. If you give it to him you will get his trade.

The car owner who has experienced the relief of Fisk Tube Service will naturally turn to the Fisk Company for tire satisfaction. Profitable, permanent customers is the result.

If you desire to put ginger into your business, handle Fisk Tires and Tubes. Write Dept. 23, if interested.

# THE FISK RUBBER COMPANY

Factory and Home Office:

Chicopee Falls, Mass.

Distributors---THE FISK RUBBER COMPANY OF N. Y.

Branches in 41 Cities



# Mosler vius Vesu Vius Plug





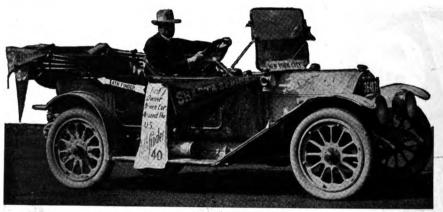




?

# BOWER SAVES POWER"





# For Economy-Bower Bearings

I have driven this car 43,000 miles in eighteen months, over every road condition and in many places where there were no roads at all, with the temperature ranging from 100 in the shade to zero. This car haw nover failed me and has always been able to accomplish any task to which I wished to put it. In this car I climbed the longest auto grade in the world -- 32 miles long, the grade ranging from one to twenty-two purcent.

I have covered the borders of the United States, touching 32 States in the Union and a large portion of Canada and wexico, and before I get another car, expect to cover at least another 50,000 miles.

To date, I have never had any part replaced and have never paid one dollar for repairs.

I have given this picture and testimony purely of my own free will and without being asked.

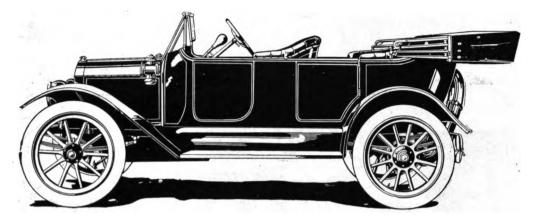
Notice: The Bower Roller Bearing is patented in the United States and foreign countries. INFRINGERS of our patent right to MAKE, VEND or SELL will be duly prosecuted.

**BOWER ROLLER BEARING COMPANY** 

Detroit, Michigan







# "All the Automobile Any Man Needs"

A car designed for those discriminating buyers who vet Maxwell 25-4 \$750 5-Passenger Touring Car

from your standpoint—for thousands of others

must consider the pocketbook—or who, able to pay more, don't choose to—and who want a light family touring car of ample power to go anywhere; of reliability that guarantees a pleasurable return sans road troubles of any kind.

have expressed the same desire you expressed.

A car that will perform; but also a car that looks the part; a car for the man who considers his automobile an everyday necessity and who counts the cost. A car that is economical in cost of upkeep—gasoline, oil and tire consumption.

Knowing the need—the demand—we have designed to meet it.

You have often said you would be willing to pay a little more for a car that looked a lot better.

And it's made just as well as it's designed. Every ounce of metal that goes into it has been specified by our chief metallurgist, after the most exhaustive analyses and tests to determine the kind of metal, the alloy and heat treatment that would best meet the requirements and perform the functions of that particular part.

This is the car. It has been designed

Better material does not enter into the construction of any car without a mental reservation—and every dollar we have, and our reputation, stand back of it, to guarantee every owner satisfaction.

# Maxwell Motor Company, (Inc.)

**Detroit** 

Dealers and Service Everywhere



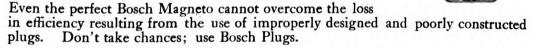
GURNEY BALL BEARING C? Jamestown, N.Y.



# Bosch Spark Plugs

Eliminate short circuits, breakage by accidental blow or heat, and compression leakage, which are common faults often found in other spark plugs but never in Bosch Plugs.

Bosch Plugs are designed to uphold the reputation of the name they bear—they must be good and are good.



Insist on Bosch Plugs and you can equal the spark plug efficiency of such high grade cars as the Peerless, Pierce-Arrow, Hudson, Mercer, Garford, Speedwell, Jeffery, Velie, Fiat, Marion, Case, Stutz, Moline-Knight, Lozier, etc., which regularly are Bosch-Plug-Equipt.

Write for "Locating the Spark Plug" --- Sent free on request

Be Satisfied Specify Bosch \$1.00 Each---From Your Dealer, Bosch Service Stations or Direct

BOSCH MAGNETO CO., 224 W. 46th St., New York

Chicago Detroit

156 Service Stations in U. S. and Canada

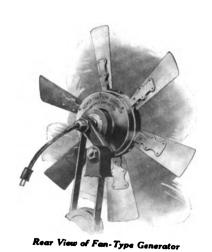
San Francisco Toronto

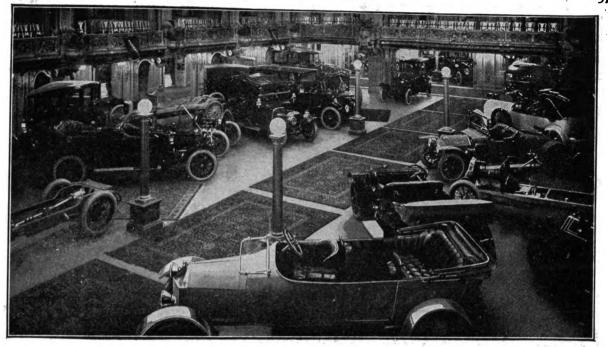
**BOSCH** 

# 800

# CAR OWNERS NEED THE







# 99% of all the Cars at the Importers' Show carried the Famous Warner Auto-Meter

THE tenth annual Importers' Automobile Salon opened in the grand ball room of the Hotel Astor, New York City, January 2.

Seven nations were represented by a few less than one hundred complete motor cars, the estimated total value of which was about one million dollars. Ultra luxuriousness was the keynote of the exhibition. In some cases the lavishly fitted bodies and appointments brought the price of a single complete car up to \$20,000.

Of these magnificent cars, the costliest in the world, built and furnished expressly for the wealthiest, most exclusive and most particular people, only one was equipped with the obsolete centrifugal type speedometer. Every other car carried the famous Warner.

The famous Magnetic Type Speedometer dominated in the proportion of nearly 99 to 1. This shows, more clearly than ever before, that people who can afford anything they want, demand that the speedometers on their cars shall be of the magnetic type. This shows that the makers who cater to those people are taking good care to heed and supply this demand for the Warner Auto-Meter.

You can have a magnetic type Warner Auto-Meter on any car you buy—if you ask for it.

#### Stewart-Warner Speedometer Corporation

Factories: Chicago, Ill. and Beloit, Wisc.

Direct Factory Branches:

Atlanta, Ga. Boson, Mass. Bufftalo, N. Y. London, Eng. Chicago, Ill. Cleveland, Ohio Detroit, Mich. Indianapolis, Ind. Kansas City, Mo. Los Angeles, Cal. Minneapolis, Minn. New York, N. Y. Philadelphia, Pa.

Pittsburgh, Pa. St. Louis, Mo. San Francisco, Cal. Paris, France.

And Service Stations in all cities and large towns

# WARNER AUTO-METER

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# KING

## **Absolute Reliability**

is the most important characteristic to be sought in a motor car, and the one which has gained the KING its enviable reputation. Night or day, in heat or cold, on glassy pavements or heavy roads, for short speedy runs or country-wide tours, the KING does its duty quietly, economically, unfailingly, and with the utmost comfort to its passengers.

Yet with its thorough efficiency the KING has grace and beauty to the highest degree, together with all the comforts and conveniences sanctioned by the best engineering practice of Europe and America.

\$1095 WITH EQUIPMENT—Famous Ward Leonard Starting and Lighting System, \$100 net additional. Prices F.O.B. Detroit.

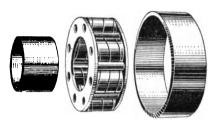
Cantilever Rear Springs; Long Stroke Motor; Unit Power Plant; Three Point Suspension; Center Control; Gemmer Steering Gear; Complete Electric Lighting; Left Hand Steer; Full Floating Rear Axle; Hyatt Roller Bearings; 112-inch Wheel Base; 20-inch Rear Doors; Complete Equipment.

30-35 H.P. Touring Car or Roadster

DEALERS, INVESTIGATE! We may have a proposition for your district.

KING MOTOR CAR COMPANY, 1300-1324 Jefferson Ave., DETROIT, MICH.

New York Agency and Showroom, Broadway at 52d Street



The Component Parts of a Hyatt Quiet Bearing.

The small or inner race, on which the rollers operate, is made of special analysis alloy steel, heat treated and ground.

The cage contains the flexible spiral rollers that cushion road shocks, reduce noise, adjust irregularities in alignment and assure full line contact for the load. Rollers made of heat treated chrome nickel steel.

The large or outer race is made of the same material as the inner race and is mounted in the bearing housing.

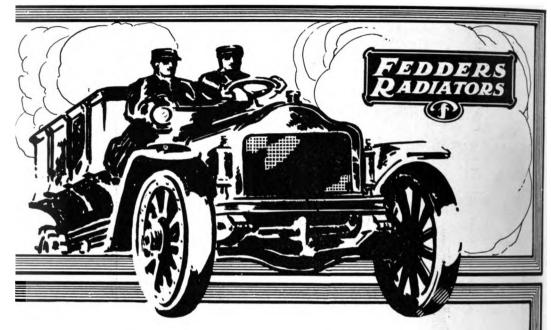
The use of Hyatt Roller Bearings in your car insures dependable bearing service.

Two books, one about motorcar bearings in general for prospective purchasers, the other for automobile owners, will be sent on request

"Hyatt Quiet Bearings"

HYATT ROLLER BEARING CO.







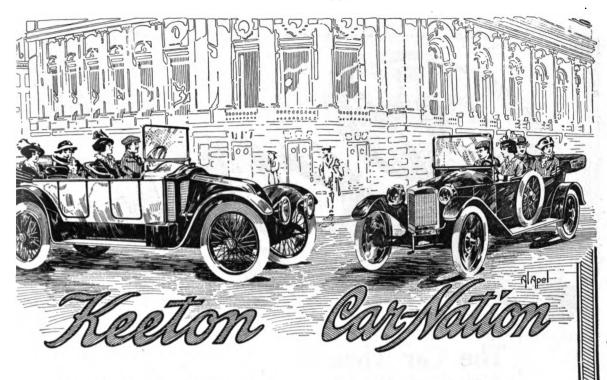
HERE is a situation that calls every detail of radiator design and construction into play.

Fedders Radiators designed and built for truck use have stood the strain of constant hard service on several of the leading commercial trucks. Year after year we have secured this business from the same concerns. This is the final test—the test of constant reliability under the most severe conditions.

The finest type of radiator suspension with ordinary workmanship on the radiator itself would not serve. Our experience has taught us how best to cope with the commercial problem in so far as radiator construction is concerned.

This illustrates how broad and comprehensive our experience has been. It is at the service of every car or truck manufacturer who may care to avail himself.

Fedders Manufacturing Co., Buffalo, N.Y.



### America's Most Distinctive Motor Car

"Distinctively Different," said a Keeton owner, in speaking of his car.

He was voicing the sentiment of every one who has seen the big foreign-looking "Keeton Six."

Yet it is not alone its distinctive appearance for which the Keeton Six is famed. There is the mechanical excellence and silent operation of the working parts—a result of the most thorough study and testing by competent engineers.

In fact, the Keeton embodies the best idea in design, construction and appearance of foreign and American makers.

# Character and completeness mark the equipment of the Keeton Six.

There is nothing commonplace about the equipment of this big car.

The Keeton has a reliable electric starter and lights, a power tire pump, a Klaxon horn, a Warner auto meter with clock attachment and every accessory is of the highest quality.

and every accessory is of the highest quality.

Also  $4\frac{1}{2}$ -inch tires on interchangeable wire wheels with one extra wheel.

## The Car for the Nation

With all the lines and style of a high-priced car and yet selling for a low price, the Car-Nation is today the leader of the small cars.

There is nothing experimental or freakish about the Car-Nation, yet it is built on lines that class it as "different."

The Car-Nation is trim and neat from its "V" shaped radiator to its strong wire wheels, and is equipped with a powerful four-cylinder motor that has repeatedly shown its worth in tests as severe as any car was ever put to.

## Car-Nation Made to Save You Money

The wise motorist of today thinks as much of the "after cost" as of the initial price of the car.

This is just where the Car-Nation stands out from the rest. You are able to travel from 25 to 30 miles on one gallon of gasoline with the Car-Nation, and its wire wheels and light weight make tire and other expense light.

It will pay you to thoroughly investigate the Car-Nation.

"Write for "The Triple Test" booklet

# The American Voiturette Company Detroit, U. S. A.

**Detroit**,



# The Car That Has "Made Good" for Seven Years

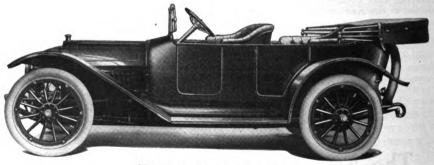
THE SAFEST car—the Regal underslung will keep the road under conditions that would ditch or overturn the ordinary car.

The exclusive Regal construction permits a special spring suspension that means EASIEST - RIDING;

and this in turn means less wear on parts, less fuel, and less oil.

Popular-priced cars are divided into two classes—the Regal and the rest. And your own comparison will prove the Regal the best.

## REGAL MOTOR CAR COMPANY, 125 Piquette Ave., Detroit, Michigan



Model T, the Famous Regal Underslung 5-passenger touring car, electrically started and lighted. Completely (quipped. Price \$1,125 f. o. b. Detroit

# Are your profits leaking away in "Free Service?"

Do you want a substantial net profit in your pocket at the end of the year? Or are you satisfied to give away your profits in "free service"?

Do you want satisfied customers—the best advertisement of your business? Or do you enjoy constant "kicking," dissatisfaction and free repairs?



# Prest-O-Lite

—is the solution of the problem.

Its reliability—freedom from trouble and repairs—make it the one lighting system for the experienced motorist.

Eighty per cent of the public is buying gas-lighted cars.

Next year it will probably be ninety per cent.

#### **PROFIT**

The Prest-O-Lited car does not come back for free repairs to the lighting system.

But it does come back for exchange service—a constant source of income for you and yet the most economical light for your customers.

You owe it to yourself to take an agency for

one of the lower priced, simple, gas-lighted cars,

no matter what other cars you are trying to sell.

An agency for such a car, plus your Prest-OLite agency, means sales, satisfied customers— PROFITS.

The sale of 6 gas-lighted cars will pay you more NET profit than the sale of 12 electriclighted cars.

# The Prest-O-Lite Co., Inc.

287 Speedway, Indianapolis, Ind.

(Contributor to Lincoln Highway) Exchange Agencies Everywhere

#### LOSS

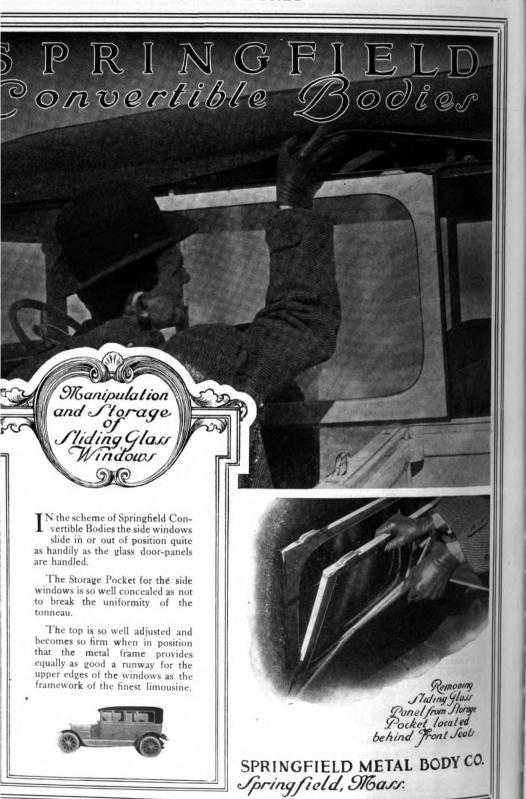
When you sell an electric-lighted car, you are gambling a large part or all of the profit on the dependability of the electric system. As a general rule, you lose.

Such cars are constantly coming back for repairs on the lighting system.

You can't charge what the repairs are worth. Sometimes you make them free. Either way, you

THE P	REST-O-L	ITE CO., INC	<b>).,</b>
287	Speedway,	Indianapolis.,	Ind

Please send information on ALL Lighting Systems to





# "WHITNEY" SILENT CHAINS

For Driving Cam Shafts, Magnetos, Lighting Systems, Generators, Pumps, Self-Starters, Etc.

If you are contemplating the use of silent chains don't fail to try the "WHITNEY." We have made chains for years and have the most complete and modern factory of its kind in the country.

We have completed a large addition to our factory and are now prepared to make prompt delivery.

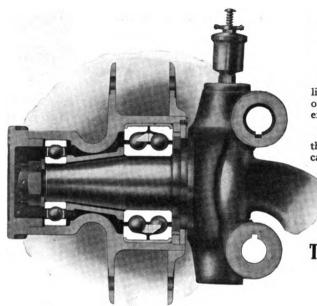
Send for catalog E. It contains useful data and information for engineers and designers.

The Whitney Mfg. Company Hartford, Connecticut





# The Ideal Front Hub Bearing



#### **Least Friction** Least Wear **Least Operating Expense**

The review of 1914 pleasure car models published by The Automobile shows 61 per cent. of the front wheels mounted on ball bearings exclusively.

The ideal ball bearing front hub employs the New Departure double row or double capacity bearing, which not only carries greater radial load than any other type

of anti-friction bearing, but at the same time sustains the severe end thrust stresses, which occur at this point, without fuel consuming friction or rapid deterioration.

The New Departure Mig. Co. BRISTOL, CONN.

> Western Branch: 1616-17 Ford Building, Detroit



## A LETTER FROM A CAR MANUFACTURER

"We have nothing but the highest words of praise for your product and have not failed at every opportunity to advertise that WE ARE INSTALL-ING THE BUDA MOTOR in our machines."

We like to receive, and do receive, many letters like the one from which this is an extract. The letter is from the manufacturer of a very remarkable car. We will give you the name if you ask it.

# The Unequalled Buda Six

is being adopted by the manufacturers of some famous fours who are now adding the Six to their lines, because The Buda Six, Models "SS-3" and "SS-U" has no superior in the whole automobile field, no matter what the price. Both scientific and practical tests will prove this for any interested manufacturer.

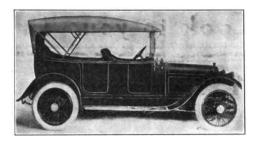
## THE BUDA COMPANY

FACTORY, HARVEY, ILL. (Chicago Suburb) all correspondence to our FACTORY REPRESENTATIVES

BRANDENBURG & COMPANY

S. Michigan Ave ,Chicago Ford Bldg., Detroit 57 τη & Broadway, New York City

# Have Your Old Car "Modernized"!



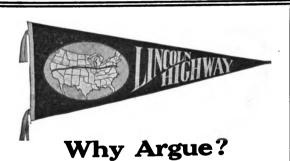
Packard users especially should have

put on their old car which could give it the same

appearance and convenience as the 1914 and 1915 models. The Sharrer Top has been contracted for by the Packard Motor Car Co.

Write for Illustrated Pamphlet and Prices

Sharrer Patent Top Co., 247 West 55th Street NEW YORK



Why argue the advantages of the LINCOLN HIGHWAY? Everybody believes it. There probably isn't one man in a hundred thousand who doesn't believe Lincoln Highway is a great thing.

ALGORIA HISTWAY IS A great URING.

Five Dollars will place you among the immortals who built are you a Certificate of membership for your office and your far boror. The road may not run through your particular come in have to admit that, as laid out, it is, everything considered desemble route that could have been selected. Do you will the road does not run through Detroit, through most of extens of the Association live in Detroit? For it the aim in Highway follow the most direct ocean-to-ocean route page off the route.

to enlist in this time of national need for good roads is to perform service, to devote yourself to a cause that is going to do the great the greatest number, to do your share in building this wonderful re people, by the people, and for the people."

od wishes and conversation alone can't build the Lincoln Highway. It money and everybody ought to help to the extent of \$5 worth if not for Send that check today.

The pennant pictured herewith will decorate your car. It is sold for \$1.00 per pair (rights and lefts), and is in four colors and 36 inches long. Send your contribution to

#### The Lincoln Highway Association Detroit, Michigan

Space contributed by Motor World

Copy contributed by H. W. Ford, President Saxon Motor Car Co.



## Splitdorf Plugs

are the real standard of plugdom-soot-proof, gas-proof, and unbreakable.

SPLITDORF PLUGS are ECONOMIC in that "stand up" under the hardest usage better than any other plug on the market.

Insist upon SPLITDORF.

Write to nearest Branch House for Details

#### SPLITDORF ELECTRICAL CO.

Atlanta—10-12 E. Harris St.
Boston—180-182 Mass. Ave.
Chicage—64-72 E. 14th St.
Cincinnati—811 Race St.
Dallas—402 S. Ervay St.
Detroit—972 Woodward Ave.
Kansas City—1823 Grand Ave.
Los Angeles—1226 S. Olive St.
London, Buenos Aires

# Look to your Tires

YOU can take a thousand miles of service out of a set of tires by driving them insufficiently inflated over ten miles of road.

## The New Positive Lock Stop Twitchell Air Gauge

Insures you against premature wearing out of tires.

It is TIRE INSURANCE FOR ONE DOLLAR



The Twitchell Gauge Company

1202 Michigan Avenue

CHICAGO

#### IF YOU ARE INTERESTED === IN =

## MOTORCYCLES

THE BICYCLING WORLD AND MOTORCYCLE REVIEW

WILL INTEREST YOU

PUBLISHED EVERY TUESDAY AT 1600 BROADWAY, NEW YORK

TWO DOLLARS PER YEAR SPECIMEN COPIES GRATIS



Everybody wants new business, but it does not follow that it will come to you unless you have the facilities to go after it.

A SANFORD TRUCK will give you a larger, more dependable and efficient delivery route radius. This means you can reach new customers at greater distance without increasing your costs.

THE SANFORD MOTOR TRUCK COMPANY W. Fayette Street, Syracuse, N. Y., U. S. A.

EXPORT DEPARTMENT
Room 333, 17 Battery Place New York City, U. S. A. F. T. SANFORD AUTOMOBILE CO., 481-483 Park Avenue Distributors for New York City

1 ton Chassis and Driver's **≝\$1660** 



1½ ton Chassis and Driver's Seat

"THE TUGBOAT OF LAND COMMERCE"



KNOX AUTO CO.,

Washers, Gaskets, Packings and Felt Goods are specified by engineers of all the leading American high grade cars.

N. E. BOOTH

642-644 Pacific Street

Brooklyn, N. Y.

# SHELDON

## **AXLES AND SPRINGS** ARE INVINCIBLE

THE SHELDON AXLE COMPANY WILKES-BARRE, PA.

CHICAGO OFFICE: 68 East 12th Street

DETROIT OFFICE: 1215 Woodward Ave.

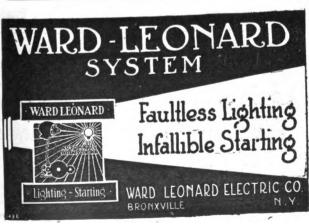


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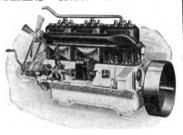
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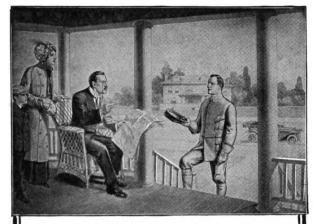
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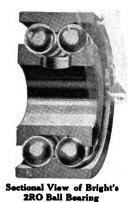
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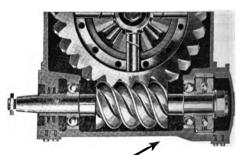
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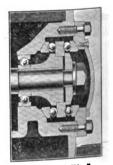
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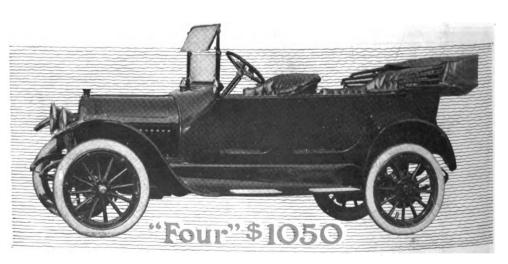
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